```
December 10, 2001, 19:12:46 ; Search time 13.99 Seconds (without alignments) 532.422 Million cell updates/sec
GenCore version 4.5 Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                   OM protein - protein search, using sw model
                                                                                                                                                                                                                   Title:
Perfect score:
                                                                                                                                  Run on:
```

US-09-170-042A-2 1756 1 MENPSPAAALGKALCALLLA.....NGSPCPELEEEAAECVPDNCV 331 BLOSUM62 Gapop 10.0 , Gapext 0.5 Scoring table: Sequence:

212252 seqs, 22503292 residues Searched:

212252 bl number of hits satisfying chosen parameters:

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

Issued_Patents_AA:*
1: /cgn2_6/ptodata/2/iaa/5A_COMB.pep:*
2: /cgn2_6/ptodata/2/iaa/5B_COMB.pep:*
3: /cgn2_6/ptodata/2/iaa/6A_COMB.pep:*
4: /cgn2_6/ptodata/2/iaa/PCTUS_COMB.pep:*
5: /cgn2_6/ptodata/2/iaa/PCTUS_COMB.pep:*
5: /cgn2_6/ptodata/2/iaa/PCTUS_COMB.pep:* Database :

. Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

		Appli	Appli	Appl			Appli	, Appl	, Appl			, Appl			Appli	Appli	, Appl	, Appl	4, Appl		Appli	Appli	Appli	Appli	Appli	Appli	Appli	Appli
	Description	Segmence 2.	'n	12								Sequence 14	Sequence 14,				Sequence 19	Sequence 19	-	_	Sequence 3,	Sequence 3,	Sequence 3,	Sequence 4,	Sequence 4,	Sequence 2,	Sequence 3,	Sequence 2,
SUMMAKIES	ID	US-08-799-173A-2	US-09-371-696-2	US-07-862-021B-12	US-08-313-288B-12	PCT-US93-03164-12	US-08-799-173A-7	US-07-862-021B-10	US-08-313-288B-10	PCT-US93-03164-10	US-09-022-238-2	US-07-862-021B-14	PCT-US93-03164-14	US-08-799-173A-18	US-09-022-238-3	US-09-371-696-3	US-07-862-021B-19	PCT-US93-03164-19	US-08-799-173A-14	US-08-799-173A-12	PCT-US95-02251-3	US-08-199-780-3	US-08-316-650-3	US-08-479-722B-4	US-08-446-794A-4	US-08-446-794A-2	US-08-750-007-3	US-08-945-024-2
	Query Match Length DB	331 2	330 4	802 1	802 1	802 5	392 2	807 1	807 1	807 5	132 4	568 1	568 5	53 2	37 4	37 4	56 1	56 5	50 2	52 2	1251 5	1252 1	1252 2	1253 3	812 1	812 1	812 1	812 2
æ	Query Match I	100.0	88.2	26.5	26.5	26.5	26.3	26.3	26.3	26.3	23.9	18.8	18.8	17.6	10.8	10.3	7.4	7.4	7.3	6.9	5.9	5.9	5.9	5.9	5.7	5.5	5.5	5.5
	Score	1756	1548.5	464.5	464.5	464.5	462.5	462.5	462.5	462.5	420.5	331	331	309	189	181	130.5	130.5	128.5	121.5	103	103	103	103	99.5	96.5	96.5	96.5
	Result No.		7	3	7	2	9	7	80	6	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	56	27

	Sequence 10, A	Sequence 17, A	Sequence 17, App	Sequence 9, Appl	Sequence 16, App	Sequence 16, App	1, 2	Sequence 1, Appl	3,	3	7	m	11,	Sequence 31, App	Sequence 31, App.	4	4	
PCT-US95-03747-2	US-08-799-173A-10	US-07-862-021B-17	PCT-US93-03164-17	US-08-799-173A-9	US-07-862-021B-16	PCT-US93-03164-16	US-08-996-083-1	US-09-429-516-1	US-09-429-516-3	US-09-220-641-3	US-08-918-914-1	US-08-996-083-3	US-08-871-572B-11	US-09-003-574-31	US-09-003-570-31	US-08-701-240-4	US-09-138-236-4	
S)	7	H	5	~	Н	S	3	4	4	4	7	'n	4	4	4	7	4	
912	52	99	26	53	26	56	1156	1156	1156	1257	1184	1184	224	692	692	695	695	
ω, υ,	5.5	5.5	5.5	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.0	5.0	4.9	4.9	4.9	4.9	4.9	
92.5	91.5	91.5	91.5	06	89.5	89.5	89.5	89.5	89.5	68	87.5	87.5	86.5	85.5	85.5	85.5	85.5	
28	67	30	31	35	33	34	35	36	37	38	39	40	41	12	4.3	44	45	

ALIGNMENTS

ö

```
10112
                             US-07-862-021B-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TOPOLOGY:
                                                                                                                                                                                                                                                                                     COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LENGTH:
                                                                                                                                                                                                                                                                    STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Op
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             οğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: Sytkowski, Arthur J.

PRILICANT: Yang, Melheng
TITLE OF INVENTION: NOVEL NPG-1 GENE THAT IS DIFFERENTIALLY EXPRESSED IN PROSTATE
TITLE OF INVENTION: TUMORS,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61 PLFRPPAQWSSLLGAAHSSDYSMWRKNQYVSNGLRDFAERGEAWALMKEIEAAGEALQSV 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HAVFSAPAVPSGTCQTSAELEVQRRHSLVSFVVRIVPSPDWFVGVDSLDLCDGDRWREQA 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           241 LVRLRQ-----SPRAFIPPAPVLPSRDNEIVDSASVPETPLDCEVSLWSSWGLCGGH 292
                                                                                                                                            241 LVRLRQSPRAFIPPAPVLPSRDNEIVDSASVPETPLDCEVSLWSSWGLCGGHCGRLGTKS 300
                                                                                                                                                                                                                   121 HEVFSAPAVPSGTGQTSAELEVQRKHSLVSFVVRIVPSPDWFVGVDSLDLCDGDRWREQA 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    181 ALDLYPYDAGTDSGFTFSSPNFATIPQDTVTEITSSSPSHPANSFYYPRLKALPPIARVT 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |----RQGDTGAAATEPQGLHPSRPSPAQQDNALVDSASVPETPLDCEVSLWSSWGLCGGH 291
61 PLFRPPAQWSSLLGAAHSSDYSWWRKNQYVSNGLRDFAERGEAWALMKEIEAAGEALQSV 120
                                                  HAVFSAPAVPSGTGQTSAELEVQRRHSLVSFVVRIVPSPDWFVGVDSLDLCDGDRWREQA 180
                                                                       181 ALDLYPYDAGTDSGFTFSSPNFATIPQDTVTEITSSSPSHPANSFYYPRLKALPPIARVT 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PLFRPPAQWSSLLGAAHSSDYSMWRKNQYVSNGLRDFAERGEAWALMKEIEAAGEALQSV 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 MENPSPAAALGKALCALLLATLGAAGQPLGGESICSARALAKYSITFTGKWSQTAFPKQY 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        19; Indels 17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             88.2%; Score 1548.5; DB 4; Length 330; 87.6%; Pred. No. 1.2e-145; ive 6; Mismatches 19; Indels 17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 292 CGRLGSKSRTPYARVQPANNGSPCPELEEEAECVADNCV 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                293 CGRLGTKSRTRYVRVQPANNGSPCPELEEEAECVPDNCV 331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HERERERICE: 01948/053002
CURRENT APPLICATION NUMBER: US/09/371,696
CURRENT FILING DATE: 1999-08-10
EARLIER APPLICATION NUMBER: US 09/022,238
EARLIER FILING DATE: 1998-02-11
EARLIER FILING DATE: 1998-02-11
EARLIER FILING DATE: 1996-05-10
NUMBER OF SEQ ID NOS: 5
SOFTWARE: FASELSEQ for Windows Version 3.0
SEQ ID NO 2
                                                                                                                                                                                                                                                                      301 RTRYVRVQPANNGSPCPELEEEAECVPDNCV 331
                                                                                                                                                                                                                                                                                        Sequence 2, Application US/09371696
Patent No. 6287777
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Local Similarity 87.6
Matches 297; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TYPE: PRT
CORGANISM: Homo sapiens
US-09-371-696-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LENGTH: 330
                                                                                                                                                                                                                                                                                                                                                                LT 2
9-371-696-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                      a
                                                                                                                         õ
                                                                                                                                                           Q
                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                    엄
                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                õ
                                                      à
```

```
69 WSSLLGAAHSSDYSWWRKNQYVSNGLRDFAERGEAWALMKEI-EAAGEALQSVHAVFSAP 127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        128 AVP--SGTGQTSAELEVQRRHSLVSFVVRIVPSPDWFVGVDSLDLCDGD-RWREQAALDL 184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     185 YPYDAGTDSGFTFSSPNFATIPQDTVTEITSSSPSHPANSFYYPRLKALPPIARVTLVRL 244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              245 RQSPRA--FIPP-----APVLPSRDNEIVDSASVPETPLDCEVSLWSSWGLCGGHCGRL 296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      404 ARKGEQCNFVPDNIDDIVADLAPEEKEE------DDTPETCIYSNWSPWSACSSSTCEK 456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           171 SLTKRICEQDSASEGVTDKP---TLDCCACGTAKYRLTFYGNWSEKTHPKDFP--RRTNH 225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9 ALGKALCALLLATLGAAGQPLGGESICSARALAKYSITFTGKWSQTAFPKQYPLFRPPAQ 68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                  TITLE OF INVENTION: CLONING, EXPRESSION AND USES OF A TITLE OF INVENTION: NOVEL SECRETED PROFEIN, F-SPONDIN UNMBRR OF SEQUENCES: 20 CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                               OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                26.5%; Score 464.5; DB 1; 33.2%; Pred. No. 1.6e-37; ive 52; Mismatches 144;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        297 GTKSRTRYVRVQPANNGSPCPELEEEAECVPDNC 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JMBER: US/07/862,021B
19920405
Sequence 12, Application US/07862021B Patent No. 5279966
                                                                                                                                                                                                                ADDRESSEE: Cooper & Dunham STREET: 30 Rockefeller Plaza
                                                                                                                                                                                                                                                                                                                                                         COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC Compatible
OPERATING SYSTEM: PC-DOS/MS-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE/DOCKET NUMBER: 400
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           28,678
                                            GENERAL INFORMATION:
APPLICANT: Jessell, Thomas M
APPLICANT: Klar, Avihu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TELEPHONE: (212) 977-9550
TELEFAX: (212) 664-0525
TELEEX: 422523 COOP UI
INFORMATION FOR SEQ ID NO: 12:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      802 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best Local Similarity 33.2 Matches 111, Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME: White, John P
REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    , MOLECULE TYPE: protein US-07-862-021B-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER:
                                                                                                                                                                                                                                                             New York
: New York
RY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AMINO ACID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FILING DATE: 19
CLASSIFICATION:
```

```
RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            C
C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     286 AWQPLANVRAAPSAEFSVDRHRHLMSFLTMLGPSPDWNVGLSAEDLCTKDCGWVQKVVQDL 345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             404 ARKGEOCNFVPDNIDDIVADLAPEEKEE-----DDTPETCIYSNWSPWSACSSSTCEK 456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          185 YPYDAGTDSGFTFSSPNFATIPQDTVTEITSSSPSHPANSFYYPRLKALPPIARVTLVRL 244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            245 RQSPRA--FIPP-----APVLPSRDNEIVDSASVPETPLDCEVSLWSSWGLCGGHCGRL 296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        69 WSSLLGAAHSSDYSMWRKNQYVSNGLRDFAERGEAWALMKEI-EAAGEALQSVHAVFSAP 127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              128 AVP--SGTGQTSAELEVQRRHSLVSFVVRIVPSPDWFVGVDSLDLCDGD-RWREQAALDL 184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9 ALGKALCALLLATLGAAGQPLGGESICSARALAKYSITFTGKWSQTAFPKQYPLFRPPAQ 68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity 33.2%; Score 464.5; DB 1; Length 802;
Best Local Similarity 33.2%; Pred. No. 1.6e-37;
Matches 111; Conservative 52; Mismatches 144; Indels 27
                                                                            APPLICANT: Jessell, Thomas M. and Avihu Klar
TITLE OF INVENTION: CLONING, EXPRESSION AND USES OF A
TITLE OF INVENTION: NOVEL SECRETED PROTEIN, F-SPONDIN
                                                                                                                                                                                                                                                                                                                                                                                                            SOFTWARE: Patentin Release #1.0, Version #1.30 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                297 GTKSRTRYVRVQPANNGSPCPELEEEAECVPDNC 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE/DOCKET NUMBER: 40028-A-PCT-US TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                   ADDRESSEE: Cooper & Dunham LLP
STREET: 1185 Avenue of the Americas
CITY: New York
STATE: New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: US/08/313,288B FILING DATE: January 5, 1995 CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                         COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
           Sequence 12, Application US/08313288B Patent No. 5750502
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: White, John P.
REGISTRATION NUMBER: 28,678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   INFORMATION FOR SEQ ID NO: 12:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELEPHONE: (212) 278-0400 - TELEFAX: (212) 391-0526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE CHARACTERISTICS:
LENGTH: 802 amino acids TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         , MOLECULE TYPE: protein US-08-313-288B-12
                                                                                                                                                                      CORRESPONDENCE ADDRESS:
                                                                                                                                                   NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             linear
                                                                                                                                                                                                                                                                                  USA
                                                                                                                                                                                                                                                                                                    10036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TOPOLOGY:
US-08-313-288B-12
                                                                                                                                                                                                                                                                                    COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ŏ
```

PCT-US93-03164-12

```
245 RQSPRA--FIPP----APVLPSRDNEIVDSASVPETPLDCEVSLWSSWGLCGGHCGRL 296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4/14 ARKGEQCNFVPDNIDDIVADLAPEEKEE------DDIPETCIYSNWSPWSACSSSTCEK 456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  128 AVP---SGTGQTSAELEVQRRHSLVSFVVRIVPSPDWFVGVDSLDLCDGD-RWREQAALDL 184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              69 WSSLLGAAHSSDYSMWRKNQYVSNGLRDFAERGEAWALMKEI-EAAGEALQSVHAVFSAP 127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      185 YPYDAGTDSGFTFSSPNFATIPQDTVTEITSSSPSHPANSFYYPRLKALPPIARVTLVRL 244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               52; Mismatches 144; Indels 27; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9 ALGKALCALLLATLGAAGQPLGGESICSARALAKYSITFTGKWSQTAFPKQYPLFRPPAQ 68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        26.5%; Score 464.5; DB 5; Length 802; 33.2%; Pred. No. 1.6e-37;
                                                                                    TITLE OF INVENTION: CLONING, EXPRESSION AND USES OF A TITLE OF INVENTION: NOVEL SECRETED PROTEIN, F-SPONDIN
                                                                                                                                                                                                                                                                                  COMPUTER: Floppy disk
COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
FILLOATION NUMBER: PCT/US91/N3124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        297 GIKSRIRYVRVQPANNGSPCPELEEEAECVPDNC 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MBER: PCT/US93/03164
19930402
Sequence 12, Application PC/TUS9303164 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TELECOMMUNICATION:
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 977-9550
TELETA: (212) 664-0525
TELETA: 42253 COPP UI
INFORMATION FOR SED ID NO: 12:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                    SEE: Cooper & Dunham
: 30 Rockefeller Plaza
New York
New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               28,678
                                           APPLICANT: Jessell, Thomas M APPLICANT: Klar, Avihu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATTORNEY/AGENT INFORMATION:
NAME: White, John P
REGISTRATION NUMBER: 28,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   : 802 amino acids
AMINO ACID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches 111; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MOLECULE TYPE: protein PCT-US93-03164-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRIOR APPLICATION DATA: APPLICATION NUMBER:
                                                                                                                           NUMBER OF SEQUENCES: 2. CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                          CLASSIFICATION:
                                                                                                                                                                                                                                                        USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FILING DATE:
                                                                                                                                                                        ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TOPOLOGY:
                                                                                                                                                                                                                                                      COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LENGIH:
                                                                                                                                                                                           STREET:
```

```
12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  69 WSSLLGAAHSSDYSWWRKNQYVSNGLRDFAERGEAWALMKEI-EAAGEALQSVHAVFSAP 127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      128 -----AVPSGTGQTSAELEVQRRHSLVSFVVRIVPSPDWFVGVDSLDLCDGD-RWRE 178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               179 QAALDLYPYDAGTDSGFTFSSPNFATIPQDTVTEITSSSPSHPANSFYYPRLKALPPIAR 238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            239 VILVRL-RQSPRAFIPPAPVLPSRDNEIVDSASVPE----TPLDCEVSLWSSWGLCGG 291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              253 VVIERIARKGEQCNIVPDNV----DDIVADLA--PEEKDEDDTPETCIYSNWSPWSACSS 306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9 ALGKALCALLLATLGAAGQPLGGESICSARALAKYSITFTGKWSQTAFPKQYPLFRPPAQ 68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     26 SLTKKLCEQDPTLDGVTDRPI---LDCCACGTAKYRLTFYGNWSEKTHPKDYP--RRANH 80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 392;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             49; Mismatches 137; Indels
                                                                         APPLICANT: HASTINGS, GREGG,
APPLICANT: PATRICK J. DILLON
TITLE OF INVENTION: HUMAN NEURONAL ATTACHMENT FACTOR-1
NUMBER OF SEQUENCES: 18
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                 COMPUTER: IBM PC Compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION WIBER: US/08/799,173A
FILING DATE: 11-FEB-1997
CLASSIFICATION: 536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       26.3%; Score 462.5; DB 2; 34.2%; Pred. No. 9e-38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        292 HCGRLGTKSRTRYVRVQPANNGSPCPELEEEAECVPDNC 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               E: HUMAN GENOME SCIENCES, INC. 9410 KEY WEST AVENUE
                      Sequence 7, Application US/08799173A Patent No. 5871969
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         : Sequence 10, Application US/07862021B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATTORNEY/AGENT INFORMATION:
NAME: BROOKES, ANDERS A,
REGISTRATION NUMBER: 36,33
REFRENCE/DOCKET NUMBER: PF226
TELECOMMUNICATION INFORMATION:
TELEFONE: (301) 309-8512
INFORMATION FOR SEQ ID NO: 7:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                   Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  392 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches 116; Conservative
                                                                                                                                                                                                                                                                                          COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TOPOLOGY: linear
MQLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                amino acid
                                                                                                                                                                                             STREET: 9410 KEY
CITY: ROCKVILLE
                                                           GENERAL INFORMATION:
                                                                                                                                                                                                                                                          USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                   MEDIUM TYPE:
                                                                                                                                                                              ADDRESSEE:
                                                                                                                                                                                                                                       ₽
US-08-799-173A-7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-07-862-021B-10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-08-799-173A-7
                                                                                                                                                                                                                                                        COUNTRY:
                                                                                                                                                                                                                                     STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
```

```
128 -----AVPSGTGQTSAELEVQRRHSLVSFVVRIVPSPDWFVGVDSLDLCDGD-RWRE 178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels 37; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          69 WSSLLGAAHSSDYSMWRKNQYVSNGLRDFAERGEAWALMKEI-EAAGEALQSVHAVFSAP 127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   291 SWQPVNVRAAP-----SAEFSVDRTRHLMSFLTMMGPSPDWNVGLSAEDLCTKECGWVQ 344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                179 QAALDLYPYDAGTDSGFTFSSPNFATIPQDTVTETTSSSPSHPANSFYYPRLKALPPIAR 238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              345 KVVQDLIPWDAGTDSGVTYESPNKPTIPQEKIRPLTSL--DHPQSPFYDPEGGSITQVAR 402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            239 VILVRL-RQSPRAFIPPAPVLPSRDNEIVDSASVPE----TPLDCEVSLWSSWGLCGG 291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9 ALGKALCALLLATLGAAGQPLGGESICSARALAKYSITFTGKWSQTAFPKQYPLFRPPAQ 68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ouery Match 26.3%; Score 462.5; DB 1; Length 807; Best Local Similarity 34.2%; Pred. No. 2.6e-37; Matches 116; Conservative 49; Mismatches 137; Indels 37
         APPLICANT: Jessell, Thomas M
APPLICANT: Jessell, Thomas M
APPLICANT: Klar, Avihu
TITLE OF INVENTION: CLONING, EXPRESSION AND USES OF A
TITLE OF INVENTION: NOVEL SECRETED PROTEIN, F-SPONDIN
                                                                                                                                                                                                                                                                                                                                                                                                 PatentIn Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         292 HCGRLGTKSRTRYVRVQPANNGSPCPELEEEAECVPDNC 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   457 STCEKGKRMRQRMLKAQ-LDLSVPCPDTQDFQPCMGPGC 494
                                                                                                                                                                                                                                                                                                                                                                                                               CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/862,021B
FILING DATE: 19920405
                                                                                                                                                                                                                                                                                                                                                                               PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ; Sequence 10, Application US/08313288B
; Patent No. 5750502
                                                                                                                                                      ADDRESSEE: COOPER & Dunham
STREET: 30 Rockefeller Plaza
CITY: New York
STATE: New York
                                                                                                                                                                                                                                                                                                                              E: Floppy disk
IBM PC compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATTORNEY/AGENT INFORMATION:
NAME: White, John P
REGISTRATION NUMBER: 28,678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 977-9550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TELEFAX: (212) 664-0525
TELEX: 422523 COOP UI
INFORMATION FOR SEQ ID NO: 1
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          : 807 amino acids
AMINO ACID
                                                                                                                                     CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                   COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ; MOLECULE TYPE: protein US-07-862-021B-10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FILING DATE: 199204(CLASSIFICATION: 435
                                                                                                                 NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                        OPERATING SYSTEM:
GENERAL INFORMATION:
                                                                                                                                                                                                                                                      USA
                                                                                                                                                                                                                                                                             10112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TOPOLOGY: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-08-313-288B-10
                                                                                                                                                                                                                                                                                                                                                       COMPUTER:
                                                                                                                                                                                                                                                                                                                                                                                                 SOFTWARE:
                                                                                                                                                                                                                                                      COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LENGTH:
```

us-09-170-042a-2.rai

Page

```
TITLE OF INVENTION: CLONING, EXPRESSION AND USES OF A TITLE OF INVENTION: NOVEL SECRETED PROTEIN, F-SPONDIN
                                                                                                                                                                                                                                                                                                                                    PCT/US93/03164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 977-9550
TELERAX: (212) 664-0525
TELEX: 422523 COOP UI
INFORMATION FOR SEQ ID NO: 10:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ) Sequence 2, Application US/09022238
                                                                         ADDRESSEE: Cooper of the Plaza of the Plaza of the Plaza of the Plaza
                                                                                                                                                                                                                            E: Floppy disk
IBM PC compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  28,678
                                                              CORRESPONDENCE ADDRESS:
ADDRESSEE: Cooper & Dunham
                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATTORNEY/AGENT INFORMATION:
NAME: White, John P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       : 807 amino acids
AMINO ACID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best Local Similarity 34.28 Matches 116; Conservative
                                                                                                                                                                                                                                                                                                                                                   19930402
                                                                                                                                                                                   AIP: 10112

DM UTER READABLE FORM:

MEDIUM TYPE: Floppy of
                                                                                                                                                                                                                                                                                                                                                                                            PRIOR APPLICATION DATA: APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ; MOLECULE TYPE: protein PCT-US93-03164-10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NAME: White, John P
REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                  APPLICATION NUMBER:
FILING DATE: 199304
                     TITLE OF INVENTION:
NUMBER OF SEQUENCES:
                                                                                                                           CITY: New York
STATE: New York
                                                                                                                                                                                                                                                                                                                                                                             CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GENERAL INFORMATION:
                                                                                                                                                                    USA
                                                                                                                                                                                                                                                                                                                                                                                                                                        FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TOPOLOGY:
                                                                                                                                                                                                                                                      COMPUTER:
                                                                                                                                                                  COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-032-238-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               dC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ωÿ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   176 SLTKKLCEQDPTLDGVTDRPI----LDCCACGTAKYRLTFYGNWSEKTHPKDYP--RRANH 230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           69 WSSLIGAAHSSDYSMWRKNQYVSNGLRDFAERGEAWALMKEI-EAAGEALQSVHAVFSAP 127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            128 -----AVPSGTGQTSAELEVQRRHSLVSFVVRIVPSPDWFVGVDSLDLCDGD-RWRE 178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                291 SWQPVNVRAAP-----SAEFSVDRTRHLMSFLTMMGPSPDWNVGLSAEDLCTKECGWVQ 344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            179 QAALDLYPYDAGTDSGFTFSSPNFATIPQDTVTEITSSSPSHPANSFYYPRLKALPPIAR 238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            403 VVIERIARKGEQCNIVPDNV----DDIVADLA--PERKDEDDTPETCIYSNWSPWSACSS 456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         37; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            239 VTLVRL-RQSPRAFIPPAPVLPSRDNEIVDSASVPE-----TPLDCEVSLWSSWGLCGG 291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9 ALGKALCALLLATLGAAGQPLGGESICSARALAKYSITFTGKWSQTAFPKQYPLFRPPAQ 68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         26.3%; Score 462.5; DB 1; Length 807; 34.2%; Pred. No. 2.6e-37; Live 49; Mismatches 137; Indels 37
               APPLICANT: Jessell, Thomas M. and Avihu Klar
TITLE OF INVENTION: CLONING, EXPRESSION AND USES OF A
TITLE OF INVENTION: NOVEL SECRETED PROTEIN, F-SPONDIN
NUMBER OF SEQUENCES: 20
CORRESPONDENCE ADDRESS: COORESPONDENCE ADDRESSE: Cooper & Dunham LLP
STREET: 1185 Avenue of the Americas
                                                                                                                                                                                                                                       COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATIOS SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PATENTION DATA:
APPLICATION NUMBER: US/08/313,288B
FILING DATE: January 5, 1995
CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            292 HCGRLGTKSRTRYVRVQPANNGSPCPELEEEAECVPDNC 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE/DOCKET NUMBER: 40028-A-PCT-US
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 278-0400
TELEFAX: (212) 391-0526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 10, Application PC/TUS9303164
GENERAL INFORMATION:
APPLICANT: Jessell, Thomas M
APPLICANT: Klar, Avihu
                                                                                                                                                                                                                                                                                                                                                                                                                             ATTORNEY/AGENT INFORMATION:
NAME: White, John P.
REGISTRATION NUMBER: 28,678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TYPE: amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best_Local Similarity 34.2%
Matches 116; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ; MOLECULE TYPE: protein US-08-313-288B-10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TOPOLOGY: linear
                                                                                                                                                             New York
New York
GENERAL INFORMATION:
                                                                                                                                                                                                         USA
                                                                                                                                                                                                                        10036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PCT-US93-03164-10
                                                                                                                                                                                                       COUNTRY:
                                                                                                                                                                               STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
```

```
345 KVVQDLIPWDAGIDSGVIYESPNKPIIPQEKIRPLITSL--DHPQSPFYDPEGGSIIQVAR 402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   128 -----AVPSGTGQTSAELEVQRRHSLVSFVVRIVPSPDWFVGVDSLDLCDGD-RWRE 178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                291 SWQPVNVRAAP----SAEFSVDRTRHLMSFLTMMGPSPDWNVGLSAEDLCTKECGWVQ 344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   179 QAALDLYPYDAGTDSGFTFSSPNFATIPQDTVTEITSSSPSHPANSFYYPRLKALPPIAR 238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           403 VVIERIARKGEQCNIVPDNV----DDIVADLA--PEEKDEDDTPETCIYSNWSPWSACSS 456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               69 WSSLLGAAHSSDYSMWRKNQYVSNGLRDFAERGEAWALMKEI-EAAGEALQSVHAVFSAP 127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           239 VILVRL-RQSPRAFIPPAPVLPSRDNEIVDSASVPE----TPLDCEVSLWSSWGLCGG 291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9 ALGKALCALLLATLGAAGQPLGGESICSARALAKYSITFTGKWSQTAFPKQYPLFRPPAQ 68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              37;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       26.3%; Score 462.5; DB 5; Length 807; 34.2%; Pred. No. 2.6e-37;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          49; Mismatches 137; Indels
OPERATING SYSTEM: PC_DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   29.3 HCGRLGTKSRTRYVRVQPANNGSPCPELEEEAECVPDNC 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A57 STCEKGKRMRQRMLKAQ-LDLSVPCPDTQDFQPCMGPGC 494
```

```
qq
APPLICANT: Sytkowski, Arthur J. and Yang, Meiheng
TITLE OF INVENTION: A novel NPG-1 Gene that is differentially expressed in prosta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6 HPSRPSPAQQDNALVDSASVPETPLDCEVSLWSSWGLCGGHCGRLGSKSRTPYARVQPAN 125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            252 IPPAPVLPSRDNEIVDSASVPETPLDCEVSLWSSWGLCGGHCGRLGTKSRTRYVRVQPAN 311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   200 PNFATIPQDTVTEITSSSPSHPANSFYYPRLKALPPIARVTLVRLRQ------SPRAF 251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   17; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            15 PQLRHHPADTVTEITSSSPSHPASSFYYPRLKACSH-----RQGDTGAAATEPQGL 65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 420.5; DB 4; Length 132;
Pred. No. 2.8e-34;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       22; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 14, Application US/07862021B
Patent No. 5279966
GENERAL INFORMATION:
APPLICANT: APPLICANT: Than's M
APPLICANT: Klar, Avihu
TITLE OF INVENTION: CLONING, EXPRESSION AND USES OF A
TITLE OF INVENTION: NOVEL SECRETED PROTEIN, F-SPONDIN
NUMBER OF SEQUENCES: 20
CORRESPONDENCE ADDRESS:
ADDRESSEE: Cooper & Dunham
STREET: 30 Rockefeller Plaza
                                                                                                                                                                                                                                  COMPUTER READABLE FORM:
MEDIUM TYPE: FLOPPY disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/022,238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5; Mismatches
                                        NUMBER OF SEQUENCES: 5
CORRESPONDENCE ADDRESS:
ADDRESSEE: LAHIVE & COCKFIELD, LLP
STREET: 28 State Street
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REGISTRATION NUMBER: P-43,338
REERENG/FOCKET NUMBER: NER-262CP
TELECOMMUNICATION INFORMATION:
TELEPHONE: (617)227-7400
                                                                                                                                                                                                                                                                                                                                                                                                                  CLASSIFICATION:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/644,326
FILING DATE: 10-MAY-1996
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Maravic-Magovcevic, Ivana
RATION NUMBER: P-43,338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     23.98;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TELEPHONE: (617)227-7400
TELEFRAX: (617)724-4214
INFORMATION FOR SEO 1D NO: 2: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LENGTH: 132 amino acids TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match 23.9
Best Local Similarity 65.4
Matches 83; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ; MOLECULE TYPE: protein US-09-022-238-2
                                                                                                                                           CITY: Boston
STATE: Massachusetts
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CITY: New York
STATE: New York
COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  126 NGSPCPE 132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        312 NGSPCPE 318
                                                                                                                                                                                         USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      10112
                                                                                                                                                                                                                                                                                                                                                                                                      FILING DATE
                                                                                                                                                                                                               02109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-07-862-021B-14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TOPOLOGY:
                                                                                                                                                                                         COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
```

```
194 GFTFSSPNFATIPQDTVTEITS-SSPSHPANSFYYPRLKALPPIARVTLVRLRQSPRAFI 252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     253 PPAPVLPSRDNEIV----DSASVPETPLDCEVSLWSSWGLCGGHCGRLGTKSRTRYVRV 307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            78 SSDYSWWRKNQYVSNGLRDFAERGEAWALMKEIEAAG-EALQSVHAVFSAPAVP--SGTG 134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      135 QTSAELEVQRRHSLVSFVVRIVPSPDWFVGVDSLDLCDGD-RWREQAALDLYPYDAGTDS 193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 SGEYVLWSMRQ-ASDGVKQVAELGSPVKMEEEIRQKGDEVLTVIKAKAQWPAWQPLNVRA 59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 568;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match 18.8%; Score 331; DB 1; Length 568
Best Local Similarity 33.1%; Pred. No. 1.7e-24;
Matches 87; Conservative 40; Mismatches 116; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 12
PCT-US3-03164-14
; Sequence 14, Application PC/TUS9303164
; GENERAL INFORMATION:
APPLICANT: Jessell, Thomas M
APPLICANT: Klar, Avihu
; TITLE OF INVENTION: CLONING, EXPRESSION AND USES OF A
TITLE OF INVENTION: NOVEL SECRETED PROTEIN, F-SPONDIN
NUMBER OF SEQUENCES: 20
CORRESPONDENCE ADDRESS:
CORRESPONDENCE AD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDIUM TYPE: Floppy disk COMPUTER: IBM PC COMPAtible OPERATING SYSTEM: PC-DOS/MS-DOS SOFTWARE: Patentin Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
                                                                       SUFTWARE: Patentin Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/862 0210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PCT/US93/03164
                                 COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         INFORMATION FOR SEQ ID NO. 14:
SEQUENCE CHARACTERISTICS:
LENGTH: 56 amino acids
TYPE: AMINO ACID
TOPOLOGY: line---
MALECUIP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          308 QPANNGSPCPELEEEAECVPDNC 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   232 Q-LDLSVPCPDTQDFEPCMGPGC 253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ADDRESSEE: Cooper & Dunham STREET: 30 Rockefeller Plaza
                                                                                                                                                                                                                                                                                                                                                ATTORNEY/AGENT INFORMATION:
NAME: White, John P
REGISTRATION NUMBER: 28,678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE/DOCKET NUMBER: 40C
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 977-9550
Floppy disk
                                                                                                                                                                                                                                                           19920405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ; MOLECÚLE TYPE: protein US-07-862-021B-14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CITY: New York
STATE: New York
COUNTRY: USA
                                                                                                                                                                                                                                                                    FILLING DATE: 19
CLASSIFICATION:
MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   10112
```

6

ö

us-09-170-042a-2.rai

```
APPLICANT: Sytkowski, Arthur J. and Yang, Meiheng
TITLE OF INVENTION: A novel NPG-1 Gene that is differentially expressed in pros
NUMBER OF SEQUENCES: 5
CORRESPONDENCE ADDRESS:
ADDRESSEE: LAHIVE & COCKFIELD, LLP
STREET: 28 State Street
                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ó
                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                    278 CEVSLWSSWGLCGGHCGRLGTKSRTRYVRVQPANNGSPCPELEEEAECVPDNC 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 CEVSLWSSWGLCGGGCGRLGTKSRTRYVRVQPANNGSPCPELEEEAECVPDNC 53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     10.8%; Score 189; DB 4; Length 37; 91.4%; Pred. No. 4.1e-12; tive 2; Mismatches 1; Indels
                                                                                                                                                                                                                                                                                                                                                        17.6%; Score 309; DB 2; Length 53; 100.0%; Pred. No. 8.6e-24; tive 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURREW APPLICATION DATA:
APPLICATION NUMBER: US/09/022,238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE/DOCKET NUMBER: NER-262CP TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CLASSIFICATION:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/644,326
FILING DATE: 10-MAY-1996
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NAME: Maravic-Magovcevic, Ivana REGISTRATION NUMBER: P-43,338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-03-022-238-3
; Sequence 3, Application US/09022238
; Patent No. 6177244
              REGISTRATION NUMBER: 36,373
REFERENCE/DOCKET NUMBER: PF22(
TELECOMMUNICATION INFORMATION:
TELEPHONE: (301) 309-8504
TELEFAX: (301) 309-8512
INPORMATION FOR SEQ ID NO: 18:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         INFORMATION FOR SEQ ID NO: 3:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               : (617)227-7400
(617)742-4214
BROOKES, ANDERS A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE CHARACTERISTICS:
LENGTH: 37 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    32; Conservative
                                                                                                                                                                                LENGTH: 53 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                       53; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        peptide
internal
                                                                                                                                                                                                                             single
                                                                                                                                                                                                                                                                   : MOLECULE TYPE: protein US-08-799-173A-18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Massachusetts
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: pepti
FRAGMENT TYPE: inter
                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Local Similarity
                                                                                                                                                                                                   TYPE: amino acid
STRANDEDNESS: sin
                                                                                                                                                                                                                                                  linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ADDAL-
STREET: 20
~mv: Boston
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   02109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FILING DATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TELEPHONE:
                                                                                                                                                                                                                                                  TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TELEFAX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Marches
                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 q
                                                                                                                                                                                                                                                                                                                                                                                                                                                        QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   120 GVTYESPNKPTIPQDKIRPLTSLDHPQSPSMT----RGGPIIPIARVVIERIARKGE--- 172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          78 SSDYSMWRKNQYVSNGLRDFAERGEAWALMKEIEAAG-EALQSVHAVFSAPAVP--SGTG 134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 135 QTSAELEVQRRHSLVSFVVRIVPSPDWFVGVDSLDLCDGD-RWREQAALDLYPYDAGTDS 193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              60 APSAEFSVDRSRHLMSFLAMMGPSPDWNVGLTSEDLCTKECGWVQKVVQDLIPWDAGTDS 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           194 GFTFSSPNFATIPQDTVTEITS-SSPSHPANSFYYPRLKALPPIARVTLVRLRQSPRAFI 252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                253 PPAPVLPSRDNEIV-----DSASVPETPLDCEVSLWSSWGLCGGHCGRLGTKSRTRYVRV 307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   173 -QCNIIPDNVDDIVADLVTEEKDEDDTPETCIYSNWSPWSACSSATCDKGKRMRQRMLKA 231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 SGEYVLWSMRQ-ASDGVKQVAELGSPVKMEEEIRQKGDEVLTVIKAKAQWPAWQPLNVRA 59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 568;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              18.8%; Score 331; DB 5; Length 56 33.1%; Pred. No. 1.7e-24; tive 40; Mismatches 116; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Patent No. 5871969

REGNERAL INFORMATION: S871969

APPLICANT: HASTINGS, GREGG,
APPLICANT: PATRICK J. DILLON
TITLE OF INVENTION: HUMAN NEURONAL ATTACHMENT FACTOR-1
NUMBER OF SEQUENCES: 18
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFWMARE: Patentin Release #1.0, Version #1.30
CURREW APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEE: HUMAN GENOME SCIENCES, INC.: 9410 KEY WEST AVENUE ROCKVILLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER: US/08/799,173A FILING DATE: 11-FEB-1997 CLASSIFICATION: 536
                                                                                                                                                                         REFERENCE/DOCKET NUMBER: 40028
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 674-9550
TELERA: (212) 664-0525
TELEX: 422523 COOP UI
INFORMATION FOR SEQ ID NO: 14:
SEQUENCE CHARACTERISTICS:
LENGTH: 568 amino acids
TYPE: AMINO ACID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   232 Q-LDLSVPCPDTQDFEPCMGPGC 253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          308 QPANNGSPCPELEEEAECVPDNC 330
                                                                                                                                                         28,678
                                        PRIOR APPLICATION DATA:
APPLICATION NUMBER:
FILING DATE:
ATORNEY/AGENT INFORMATION:
NAME: White, John P
REGISTRATION NUMBER: 28,67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Best Local Similarity 33.1%
Matches 87; Conservative
  FILING DATE: 19930402
                                                                                                                                                                                                                                                                                                                                                                                                         MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                         linear
                     CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                20850
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ã
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ULT 13
8-799-173A-18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                 -US93-03164-14
                                                                                                                                                                                                                                                                                                                                                                                      TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
```

οy q ò qq δý g ŏ qq ò ö

O P Search completed: December 10, 2001, 20:00:45 Job time: 2879 sec

```
GenCore version 4.5 Copyright (c) 1993 - 2000 Compugen Ltd.
```

OM protein - protein search, using sw model

December 10, 2001, 13:38:51; Search time 75.12 Seconds Run on:

(without alignments) 326.388 Million cell updates/sec

US-09-170-042A-2 Title:

Perfect score: Sequence:

1 MENPSPAAALGKALCALLLA......NGSPCPELEEEAECVPDNCV 331

BLOSUM62 Scoring table:

Gapop 10.0 , Gapext 0.5

522463 al number of hits satisfying chosen parameters:

522463 seqs, 74073290 residues

Searched:

Minimum DB seq length: 0 Maximum DB seq length: 2000000000

Maximum Match 100% Listing first 45 summaries Post-processing: Minimum Match 0%

Database :

/SIDS8/gcgdata/geneseq/geneseqp/AA1990.DAT:* DAT: * /SIDS8/gcgdata/geneseq/geneseqp/AA1993.DAT:*/SIDS8/gcgdata/geneseq/geneseqp/AA1994.DAT:*/SIDS8/gcgdata/geneseq/geneseqp/AA1995.DAT:*/SIDS8/gcgdata/geneseq/geneseqp/AA195.DAT:*/SIDS8/gcgdata/geneseq/geneseqp/AA195.DAT:*/ /SIDS8/gcgdata/geneseg/genesegp/AA1997.DAT:*/SIDS8/gcgdata/geneseg/genesegp/AA1998.DAT:*/SIDS8/gcgdata/geneseg/genesegp/AA1999.DAT:* /SIDS8/gcgdata/geneseg/genesegp/AA1989.DAT:* DAT: * SIDSB/gcgdata/geneseq/geneseqp/AA1980.DAT:*
/SIDSB/gcgdata/geneseq/geneseqp/AA1981.DAT:*
/SIDSB/gcgdata/geneseq/geneseqp/AA1982.DAT:*
/SIDSB/gcgdata/geneseq/geneseqp/AA1983.DAT:*
/SIDSB/gcgdata/geneseq/geneseqp/AA1984.DAT:*
/SIDSB/gcgdata/geneseq/geneseqp/AA1984.DAT:*
/SIDSB/gcgdata/geneseq/geneseqp/AA1986.DAT:*
/SIDSB/gcgdata/geneseq/geneseqp/AA1986.DAT:*
/SIDSB/gcgdata/geneseq/geneseqp/AA1986.DAT:* /SIDS8/gcgdata/geneseq/geneseqp/AA1988.DAT:* /SIDS8/gcgdata/geneseq/genesegp/AA1991. /SIDS8/gcgdata/geneseq/genesegp/AA1992. /SIDS8/gcgdata/geneseq/geneseqp/AA2000. A_Geneseq_1101:* 16: 17: 18: 19: 20: 22: Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

/SIDS8/gcgdata/geneseq/geneseqp/AA2001.DAT:*

	Description	Human NAF-1 orotei	Human neuronal att	Human mindin polvo	Human polypeptide	Human polypeptide	Cancer specific pr	Human extracellula	Adhesion-modulatin	Human PRO866 prote	Human PRORFE (INOA	Human PRO866 prote
SUMMARIES	ID	AAW92460	AAW23663	AAW83328	AAM38872	AAM40658	AAY79561	AAB82472	AAW70589	AAY41721	AAB44277	AAB33465
	h DB	1 20	1 18	1 20	1 22	4 22	1 21	1 22	1 19	1 20	1 21	1 21
	Lengt	33	33	331	33.	44	331	33	33.	33.	33.	331
df	Query Match Length DB	100.0	99.5	99.5	99.4	99.4	99.3	99.5	99.1	99.1	99.1	99.1
	Score	1756	1748	1747	1746	1746	1744	1742	1741	1741	1741	1741
	Result No.	П	7	ю	4	2	9	7	8	6	10	11

Human PRO866 antit Human colon cancer Human secreted pro Human secreted pro Human mindin relat	F-spondin of chick Rat F-spondin (PF5-9). Rat vascular smoot Vascular endotheli Human vascular second	e vascular lar endoth lar endoth ovarian o	Protein fragment e Nenopus F-spondin. Human NAF-1 protei Human secreted pro Sequence homologou Lung cancer associ Human protein sequ	Human polypeptide Human polypeptide Secreted protein S Rat F-spondin FSP- Mouse TANGO 204 vo Mouse TANGO 204 va Mouse TANGO 204 va Mouse TANGO 204 va Rat F-spondin FSP- Human polypeptide Human TANGO 204 vo
47562	AAR44242 AAW92461 AAR44241 AAY04264 AAB13074 AAY04262	AAY04263 AAB13072 AAB13073 AAB74401 AAY34113	AAB27878 AAR44243 AAW92469 AAB34693 AAB377 AAB58354 AAB58354	AAM39295 AAB30155 AAB420155 AAB48109 AAB48130 AAB48131 AAB48132 AAB48132 AAM42006 AAM42006
21 21 21 20	14 20 20 20 20	20 21 22 22 20	21 21 21 22 23	220222222222222222222222222222222222222
331 385 249 299 290	802 392 807 807 807	807 807 807 807 132	63 105 182 182 343	1538 1588 1588 264 264 264 264 264
90000		36.6	0 8 7 5 4 8 8 7	
17 17 13 01 5	464.5 462.5 462.5 462.5	460.5 460.5 460.5 420.5	351 331 309 277 250 155.5	134 126.5 126.5 126.5 126.5 124.5 121.5 116.5
12 13 14 15	1,8 1,8 2,1 2,1 2,1 2,1	23 25 25 27	27 0 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	266 444 44 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4

ALIGNMENTS

AAW92460 standard; Protein; 331 AA (first entry) 21-APR-1999 AAW92460; AAW92460 RESULT

Human NAF-1 protein.

NAF-1; neuronal attachment factor-1; F-spondin analogue; treatment; spinal cord injury; peripheral nerves damage; neural cell adhesion; neurite extension; tumnour call metastasis; inhibitor; mobility; disease; endothelial cell proliferation; tumour neovascularisation; haemostasis; angiostatic agent; wound healing; diagnostic; neurotrophic; anticancer; antimetastatic; anti-angiogenic; antimalarial; human.

Homo sapiens

1..23 /label= signal_peptide 24..331 Location/Qualifiers US5871969-A. 15-FEB-1999. Peptide rotein

96US-0011519. 97US-0799173. 97US-0799173 2-FEB-1997; L.2 - JEB-1996; 12-FEB-1997;

(HUMA-) HUMAN GENOME SCI INC

```
NAF-1. NAF-1 is an analogue of rat F-spondin and is used to treat spinal cord injuries and damage to peripheral nerves (by promoting neural cell adhesion and neurite extension), to inhibit tumor cell metastasis (particularly in small cell and breast carcinoma) and endothelial cell proliferation, adhesion and mobility, to reduce tumor neovascularisation, as angiostatic agents for tumor cells, to promote wound healing and to modulate hemostasis. NAF-1 may also be used to identify treatments and diagnoses for human disease. Fragments of the nucleic acid that do not encode NAF-1 peptides are useful as probes to isolate the NAF-1 gene, its allelic variants, full-length cDNA or related sequences, in chromosomal
                                                                                                                                                                                                                                                                                                                                                                                                                                                          location by in situ hybridization or in Northern blotting, and as diagnostic probes or primers. The protein has neurotrophic, anticancer, antimetastatic, anti-anglogenic, antimalarial and modulates adhesion, proliferation and mobility of cells.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181 aldlypydagtdsgftfsspnfatipqdtvteitssspshpansfyyprlkalppiarvt 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LVRLRQSPRAFIPPAPVLPSRDNEIVDSASVPETPLDCEVSLWSSWGLCGGHCGRLGTKS 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ALDLYPYDAGTDSGFTFSSPNFATIPQDTVTEITSSSPSHPANSFYYPRLKALPPIARVT 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61 PLFRPPAQWSSLLGAAHSSDYSMWRKNQYVSNGLRDFAERGEAWALMKEIEAAGEALQSV 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 MENPSPAAALGKALCALLLATLGAAGQPLGGESICSARALAKYSITFTGKWSQTAFPKQY 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Neuronal attachment factor-1; NAF-1; human; cell-cell interaction; cell adhesion; spinal cord injury; peripheral nerve damage; tumour; meţastasiş; therapy; malaria; wound healing.
                                                                                                              Nucleic acid encoding human neuronal attachment factor-1 - used to e.g. treat spinal cord injuries, and inhibit tumor cell metastasis and neovascularization
                                                                                                                                                                                                                                         This sequence represents a novel human neuronal attachment factor-1,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           100.0%; Score 1756; DB 20; Length 331; 100.0%; Pred. No. 7.1e-164; Live 0; Mismatches 0; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             301 RTRYVRVQPANNGSPCPELEEEAECVPDNCV 331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human neuronal attachment factor-1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAW23663 standard; Protein; 331 AA
                                                                                                                                                                                                   Claim la; Fig 1; 29pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 08-MAR-1998 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches 331; Conservative
                 Dillon PJ, Hastings G;
                                                         WPI; 1999-166644/14.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    331 AA;
                                                                              N-PSDB; AAX02019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sednence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAW23663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                   8 \times 33335 \times 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     a
```

```
New isolated human neuronal attachment factor-1 - promotes cell-cell interaction and cell adhesion, used for treating e.g. spinal cord injury, peripheral nerve damage or tumours
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  a novel protein that promotes cell-cell interaction and cell adhesion. Its amino acid sequence was deduced from a DNA molecule (see AAT78360) isolated from a cDNA library derived from human expithelial sarcoma. NAF-1 shows sequence homology to the rat F-spondin family. NAF-1 polypeptides, especially the mature protein, can be expressed in host cells. It can be used e.g. to treat spinal cord injuries or damage to peripheral nerves by
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       This protein comprises human neuronal attachment factor-1 (NAF-1),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  promoting neural cell adhesion and neurite extension, to inhibit tumour cell metastases, inhibit endothelial cell proliferation, adhesion and mctliity, to decreases tumour neovascularisation, to be angiostatic for tumours, to promote wound healing, and to modulate heemostasis. It can also be used to screen for agonists and for antagonists useful e.g. in the prevention of malaria.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 331;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 1748; DB 18;
Pred. No. 4.3e-163;
0; Mismatches 1;
                                           Location/Qualifiers
                                                        /label= Sig_peptide
24..331
                                                                                          24..331
/label= Mat_protein
                                                                                                                                                                                                                                                                                                                                                                                                                                            Claim 1; Page 42-43; 55pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                99.5%;
                                                                                                                                                                                                                                                                     (HUMA-) HUMAN GENOME SCI INC.
                                                                                                                                                                                                                                      96WO-US01857.
                                                                                                                                                                                                      96WO-US01857
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity 99.74
Matches 330; Conservative
                                                                                                                                                                                                                                                                                                                                WPI; 1997-415344/38.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   331 AA;
                                                                                                                                                                                                                                                                                                                                                  N-PSDB; AAT78360.
               Homo sapiens.
                                                                                                                                                                                                      .2-FEB-1996;
                                                                                                                                                                                                                                      12-FEB-1996;
                                                                                                                                                                          14-AUG-1997.
                                                                                                                                                                                                                                                                                                     Hastings GA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Seguence
                                                            Peptide
                                                                                           Protein
;
0
```

```
241 LVRLRQSPRAFIPPAPVLPSRDNEIVDSASVPETPLDCEVSLWSSWGLCGGHCGRLGTKS 300
                                                                                                                                                                                                                                                                         61 PLFRPPAQWSSLLGAAHSSDYSMWRKNQYVSNGLRDFAERGEAWALMKEIEAAGEALQSV 120
                                                                                                 HAVFSAPAVPSGTGQTSAELEVQRRHSLVSFVVRIVPSPDWFVGVDSLDLCDGDRWREQA 180
                        1 MENPSPAAALGKALCALLLATLGAAGQPLGGESICSARALAKYSITFTGKWSQTAFPKQY 60
                                                      9
0; Gaps
                                          ALDLYPYDAGTDSGFTFSSPNFATIPQDTVTEITSSSPSHPANSFYYPRLKALPPIARVT
                                                                                                                 61
                                                                                                                                              121
                                                                                                                                                                                                       181
                                                                                                                                                                                                                                                                                            241
```

q

Oy Oy Oy Oy

ò

301 RTRYVRVQPANNGSPCPELEEEAECVPDNCV 331

Oy Db

ó;

g

```
61 plfrppaqwssllgaahssdysmwrkngyvsnglrdfaergeawalikeieaagealgsv 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAM38872 standard; Protein; 331 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Human polypeptide SEQ ID NO 2017.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Liu C, Asundi V, Che
Wang Z, Wehrman T, Xi
Zhou P, Goodrich R,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2000US-0653450.
2000US-0662191.
2000US-0693036.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           26-DEC-2000; 2000WO-US34263.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2000US-0488725.
2000US-0552317.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2000US-0598042.
2000US-0620312.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2000US-0727344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WPI; 2001-442253/47.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (HYSE-) HYSEQ INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Wang J, Wang Z,
Zhao QA, Zhou P,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              N-PSDB; AAI58028
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WO200153312-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         21.-JAN-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            19-JUL-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 03-AUG-2000;
14-SEP-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    09-JUL-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               19-OCT-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 25-APR-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              22-OCT-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              26-JUL-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          leukaemia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAM38872;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Tang YT,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAM38872
                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT
                                                                                                                                                                                 ď
                                                                                                                                                                                                                                                                            CP
                                             δ
                                                                                           qq
                                                                                                                                        ò
                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                          27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            This is the amino acid sequence of human mindin, a novel integrin ligand. It has homology to F spondin, and may have a multifunctional activity in normal and disease states. The invention provides human mindin polypeptides and polynucleotides fee also AAV72537-38) and methods for producing such polypeptides and polynucleotides in the treatment of angiogenic diseases (cancer, cancer metastasis, chronic inflammatory disorders, rheumatoid arthritis, atherosclerosis, macular degeneration, disorders and tissue remodelling. The invention also relates to methods for identifying agonists and antagonists/inhibitors and for treating conditions associated with human mindin imbalance with the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61 PLFRPPAQWSSLLGAAHSSDYSWWRKNQYVSNGLRDFAERGEAWALMKEIEAAGEALQSV 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 MENPSPAAALGKALCALLLATLGAAGQPLGGESICSARALAKYSITFTGKWSQTAFPRQY 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A new polypeptide is the integrin ligand, human mindin - useful in therapy and diagnostic assays for diseases such as those associated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   identified compounds. Diagnostic assays for detecting diseases associated with inappropriate human mindin activity or levels are
                                                                                                                                                                                                                                                                                                                     Mindin; human; integrin ligand; angiogenic disease; cancer; metastasis; chronic inflammatory disorder; rheumatoid arthritis; atherosclerosis; macular degeneration, diabetic retinopathy; restenosis; Alzheimer's disease; neural disorder; tissue remodelling; therapy; diagnosis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 1747; DB 20; Length 331; Pred. No. 5.4e-163;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
  Trulli SH, Tsui P;
                                                                                                                                        AAW83328 standard; Protein; 331 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Claim 1; Page 29; 39pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SMIK ) SMITHKLINE BEECHAM CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 99.5%;
99.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 97US-0046106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      98WO-US09476
                                                                                                                                                                                                                                 01-MAR-1999 (first entry)
                                                                                                                                                                                                                                                                            Human mindin polypeptide.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Jonak ZL, Lane PA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WPI; 1999-034688/03
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              331 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          with angiogenesis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  N-PSDB; AAV72537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WO9850073-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    07-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 09-MAY-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     also claimed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           12-NOV-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            329;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                AAW83328
                                                                                           RESULT
```

q ò

```
The invention relates to human nucleic acids (AAI57798-AAI61369) and the encoded polypeptides (AAM38642-AAM42213) with nootropic, immunosuppressant and cytostatic activity. The polynucleotides are useful in gene therapy. A composition containing a polypeptide or polynucleotide of the invention may be used to treat diseases of the peripheral nervous system, such as peripheral nervous injuries, peripheral neuropathy and
                                                                                                                                                                                                                                                                                                                                                                                                                             Human; nootropic; immunosuppressant; cytostatic; gene therapy; cancer; peripheral nervous system; neuropathy; central nervous system; CNS; Alzheimer's; Parkinson's disease; Huntington's disease; haemostatic; amyotrophic lateral sclerosis; Shy-Drager Syndrome; chemotactic; chemokinetic; thrombolytic; drug screening; arthritis; inflammation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Wang D;
                181 ALDLYPYDAGTDSGFTFSSPNFATIPQDTVTEITSSSPSHPANSFYYPRLKALPPIARVT 240
                                                                                            181 aldlypydagtdsgftfsspnfatipgdtvteitssspshpansfyyprlkalppiarvt 240
                                                                                                                          241 LVRLRQSPRAFIPPAPVLPSRDNEIVDSASVPETPLDCEVSLWSSWGLCGGHCGRLGTKS 300
                                                                                                                                          121 HAVFSAPAVPSGTGQTSAELEVQRRHSLVSFVVRIVPSPDWFVGVDSLDLCDGDRWREQA 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Novel nucleic acids and polypeptides, useful for treating disorders such as central nervous system injuries -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ren F, W.
Zhang J;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Yang Y,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Qian XB,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Chen R, Ma Y,
Xu C, Xue AJ,
R, Drmanac RT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Example 3; SEQ ID NO 2017; 10078pp; English.
                                                                                                                                                                                                         301 RTRYVRVQPANNGSPCPELEEEAECVPDNCV 331
```

us-09-170-042a-2.rag

```
ö
localised neuropathies and central nervous system diseases, such as Alzheimer's, Parkinson's disease, Huntington's disease, amyotrophic lateral sclerosis, and Shy-Drager Syndrome. Other uses include the utilisation of the activities such as: Immune system suppression, Activin/inhibin activity, chemotactic/chemokinetic activity, haemostatic as and thrombolytic activity, cancer diagnosis and threapy, drug screening, assays for receptor activity, arthritis and inflammation, leukaemias and C.N.S disorders.
                                                                                                                                  The sequence data for this patent did not form part of the printed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         nootropic; immunosuppressant; cytostatic; gene therapy; cancer;
                                                                                                                                                                                                                                                                                                                                                                                                                                        61 PLFRPPAQWSSLLGAAHSSDYSMWRKNQYVSNGLRDFAERGEAWALMKEIEAAGEALQSV 120
                                                                                                                                                                                                                                                                                                                                                                                        61 plfrppaqwssllgaahssdysmwrkngyvsnglrdfaergeawalmkeieaagealgsv 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ALDLYPYDAGTDSGFTFSSPNFATIPQDTVTEITSSSPSHPANSFYYPRLKALPPIARVT 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    241 LVRLRQSPRAFIPPAPVLPSRDNEIVDSASVPETPLDCEVSLWSSWGLCGGHCGRLGTKS 300
                                                                                                                                                                                                                                                                                             9
                                                                                                                                                                                                                                                                                                                           9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        peripheral nervous system; neuropathy; central nervous system; CNS; Alzhchmer's, Parkinson's disease; huntington's disease; haemostatic; amyotrophic lateral sclerosis; Shy-brager Syndrome; chemotactic; chemokinetic; thrombolytic; drug screening; arthritis; inflammation;
                                                                                                                                                                                                                                                                                           1 MENPSPAAALGKALCALLLATLGAAGQPLGGESICSARALAKYSITFTGKWSQTAFPKQY
                                                                                                                                                                                                                                                                                                          HAVFSAPAVPSGTGQTSAELEVQRRHSLVSFVVRIVPSPDWFVGVDSLDLCDGDRWREQA
                                                                                                                                                                                                                                                                                                                                                                         ó
                                                                                                                                                                                                                            99.4%; Score 1746; DB 22; Length 331; 99.4%; Pred. No. 6.8e-163; ive 1; Mismatches 1; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  301 RTRYVRVQPANNGSPCPELEEEAECVPDNCV 331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Human polypeptide SEQ ID NO 5589.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAM40658 standard; Protein; 444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2000us-0552317.
2000us-0598042.
2000us-0620312.
2000us-0653450.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  26-DEC-2000; 2000WO-US34263.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (first entry)
                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                             Similarity
                                                                                                                                                                                 331 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WO200153312-A1
                                                                                                                                              specification
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               25-APR-2000;
09-JUL-2000;
19-JUL-2000;
03-AUG-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 21-JAN-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          22-OCT-2001
                                                                                                                                                                                                                                                            Matches 329;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    26-JUL-2001
                                                                                                                                                                               Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         leukaemia
                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAM40658;
                                                                                                                                                                                                                                                                                                                                                                                                                                                     121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               301
                                                                                                                                  Note
                                                                                                                                                                                                                                                                                                                                                                                                                      121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAM40658
   8888888888888
                                                                                                                                                                                                                                                                                                                                                                                      a
                                                                                                                                                                                                                                                                                                                                                                                                                      õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
```

```
the encoded polypeptides (AAAM421313) with nootropic, immunosuppressant and cytostatic activity. The polynucleotides are useful in gene therapy. A composition containing a polypeptide or polynucleotide of the invention may be used to treat diseases of the peripheral nervous system, such as peripheral nervous injuries, peripheral neuropathy and localised neuropathies and central nervous system diseases, such as Alzheimer's, Parkinson's disease, Huntington's disease, amyotrophic lateral sclerosis, and Shy-Drager Syndrome. Other uses include the utilisation of the activities such as Immune system suppression, Activin/inhibin activity, chemotactic/chemokinetic activity, haemostatic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   and thrombolytic activity, cancer diagnosis and therapy, drug screening, assays for receptor activity, arthritis and inflammation, leukaemias and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             The sequence data for this patent did not form part of the printed
                                                                                                                                                                                           ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PLFRPPAQWSSLLGAAHSSDYSMWRKNQYVSNGLRDFAERGEAWALMKEIEAAGEALQSV 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HAVFSAPAVPSGTGQTSAELEVQRRHSLVSFVVRIVPSPDWFVGVDSLDLCDGDRWREQA 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LVRLRQSPRAFIPPAPVLPSRDNEIVDSASVPETPLDCEVSLWSSWGLCGGHCGRLGTKS 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     The invention relates to human nucleic acids (AAI57798-AAI61369) and
                                                                                                                                                                                           Wang
                                                                                                                                                                                                                                                                                                                                                                                                  Novel nucleic acids and polypeptides, useful for treating disorders such as central nervous system injuries \cdot
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 MENPSPAAALGKALCALLLATLGAAGQPLGGESICSARALAKYSITFTGKWSQTAFPKQY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ALDLYPYDAGTDSGFTFSSPNFATIPQDTVTEITSSSPSHPANSFYYPRLKALPPIARVT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ren F, W.
Zhang J;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 1746; DB 22; Length 444;
Pred. No. 1e-162;
1; Mismatches 1; Indels 0;
                                                                                                                                                                                           Qian XB,
Yang Y,
                                                                                                                                                                                           Shen R, Ma Y,
Xu C, Xue AJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Example 2; SEQ ID NO 5589; 10078pp; English.
                                                                                                                                                                                 Asundi V, Chen R, Ma Y, Wehrman T, Xu C, Xue AJ Goodrich R, Drmanac RT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RTRYVRVQPANNGSPCPELEEEAECVPDNCV 331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           rtryvrvqpanngspcpeleeeaecvpdncv 444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Æ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAY79561 standard; Protein; 331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         99.48;
14-SEP-2000; 2000US-0662191.
19-OCT-2000; 2000US-0693036.
29-NOV-2000; 2000US-0727344.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches 329; Conservative
                                                                                                                                                                                                                                                                                                        WPI; 2001-442253/47.
                                                                                                                                                                                                                    Wang Z, V
Zhou P,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    444 AA;
                                                                                                                            (HYSE-) HYSEQ INC
                                                                                                                                                                                       Liu C,
                                                                                                                                                                                                                                                                                                                                             N-PSDB; AAI59814
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              disorders.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         specification
                                                                                                                                                                                                                    Wang J, W
Zhao QA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Seguence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAY79561;
                                                                                                                                                                                    rang YT,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              C.N.S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Note:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAY79561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT
      $\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac{1}{2}$\frac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ōλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         φ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             XXXX
```

```
Diagnosing, detecting, staging, monitoring, imaging and treating cancers, especially useful for detecting prostate cancer comprises measuring changes in levels of cancer specific genes in cells, tissues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ALDLYPYDAGTDSGFTFSSPNFATIPQDTVTEITSSSPSHPANSFYYPRLKALPPIARVT 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61 PLFRPPAQWSSLLGAAHSSDYSMWRKNQYVSNGLRDFAERGEAWALMKEIEAAGEALQSV 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61 plfrppaqwssllgaahssdysmwrkngyvsnglrdfaergeawalmkeieaagealgsv 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LVRLRQSPRAFIPPAAPVLPSRDNEIVDSASVPETPLDCEVSLWSSWGLCGGHCGRLGTKS 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     specific gene (CSG) pro108 (see AA295034). The CSG was identified using a suppression subtractive hybridization method. It is a diagnostic marker for prostate cancer. In 11 different healthy tissues examined, pro108 mRNA expression was highest in the ovary overexpression of CSG pro108 mRNA expression was highest in the ovary overexpression of CSG pro108 was observed in 13 of 13 prostate cancer tissues examined. CSGs comprising pro108, the encoded polypeptide, or an antibody that specifically binds CSG, are used in claimed methods for the diagnosis, detection, staging.
                                                                   Cancer specific gene; CSG; prostate cancer; diagnosis; monitoring; staging; imaging; metastasis; therapy; human; Pro108.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     monitoring, imaging and treatment of prostate cancer. The new methods provide earlier diagnosis for the presence and metastasis of prostate cancer, and can be used to determine if a cancer has metastasized, or to monitor the progress or stage of the disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 MENPSPAAALGKALCALLLATLGAAGQPLGGESICSARALAKYSITFTGKWSQTAFPKQY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       HAVFSAPAVPSGTGQTSAELEVQRRHSLVSFVVRIVPSPDWFVGVDSLDLCDGDRWREQA
                                 Cancer specific protein Pro108 useful as prostate cancer marker.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 331;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                        Recipon H, Cafferkey R;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 / Match 99.3%; Score 1744; DB 21; Local Similarity 99.4%; Pred. No. 1.1e-162; nes 329; Conservative 0; Mismatches 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Claim 6; Page 29-30; 35pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              when it has not metastasized.
                                                                                                                                                                                                                                                                                                                                        Sun Y, Salceda S,
                                                                                                                                                                                                                               99WO-US23764
                                                                                                                                                                                                                                                                   98US-0104741
15-AUG-2000 (first entry)
                                                                                                                                                                                                                                                                                                      (DIAD-) DIADEXUS LLC.
                                                                                                                                                                                                                                                                                                                                                                          WPI; 2000-339528/29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                331 AA;
                                                                                                                                                                                                                                                                                                                                                                                             N-PSDB; AAZ95034.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   and body fluids
                                                                                                                                                         WO200023108-A1.
                                                                                                                          Homo sapiens
                                                                                                                                                                                                                                                                 19-OCT-1998;
                                                                                                                                                                                                                               18-OCT-1999;
                                                                                                                                                                                             27-APR-2000.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                        Ali SM,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            φ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
```

```
\aleph \sigma vel human extracellular matrix polypeptide, RG1, useful in research, diagnosis and treatment of metastasis such as prostate cancer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         The present sequence is that of human RG1, a new homologue of the extracellular matrix protein family, which is expressed in prostate tissue and may be over-expressed in prostate tumours. It shows homology to mindin and f-spondin proteins. This protein family is distinguished by 2 conserved spondin domains near the N-terminus and at least 1 thrombospondin type 1 repeat at the C-terminus. The rgl gene (see ARF90566) was isolated from a database screening. The thromtion provides human RG polypeptides (especially corresponding to amino acids 1.331, 21-331, 27-331, 28-46 and 77-91 of RG1), polynucleotides encoding them, methods for producing the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Steinbrecher
                                                                                                                                                                                                                                                                                                                                                                                                                                                       RG:; human; extracellular matrix protein; prostate cancer; memastasis; tumour; benign prostatic hyperplasia; therapy;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /label= Immunogenic_peptide
/note= "specifically claimed in claim 27"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /label= Immunogenic_peptide
/note= "specifically claimed in claim 25"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /label= Immunogenic_peptide
/note= "specifically claimed in claim 28"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Schneider DW,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /label= Thrombospondin_domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /label= Immunogenic_peptide
/note= "specifically claimed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /label= F-spondin_domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /label= F-spondin_domain
                                301 RTRYVRVQPANNGSPCPELEEEAECVPDNCV 331
                                                                                                                                                                                                                                                                                                                                                                                              Human extracellular matrix protein RG1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Location/Qualifiers
                                                                                                                                                                                                             AAB82472 standard; Protein; 331 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Parry G,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Claim 1; Fig 2; 69pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          15-DEC-2000; 2000WO-US33901.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 99US-0172370.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 07-DEC-2000; 2000US-9966561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  N-PSDB; AAF90566, AAF90567.
                                                                                                                                                                                                                                                                                                                                    (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        . 221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        diagnosis; antitumour.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Harkins R, Parkes D,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (SCHD ) SCHERING AG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WPI; 2001-398128/42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WO200144291-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       16-DEC-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens
                                                                                                                                                                                                                                                                                                                                    22-AUG-2001
                                                                                                                                                                                                                                                                          AAB82472;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Domain
                                                                                                                                                RESULT
AAB82472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δλ
                                                      pp
                                                                                                                                                                                                                                                                          ACCONTRACTOR STATES OF STA
```

```
ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 B-cell cancer; infertility; Wolf-Hirschhorn syndrome; chromosome 4 (p16.3).
                                                                                                                                                                                                                                                                                                                                                                                                                                                 240
                                                                                                                                                                                                                                                                                                                                                    241 lvrlrqsprafippapvlpsrdneivdsasvpetpldcevslwsswglcgghcgrlgtks 300
                                                                                                                                                                                                                                                                                                                                     PLFRPPAQWSSLLGAAHSSDYSMWRKNQYVSNGLRDFAERGEAWALMKEIEAAGEALQSV 120
                                                                                                                                                                                                                                                                                                                                                                                          HAVFSAPAVPSGTGQTSAELEVQRRHSLVSFVVRIVPSPDWFVGVDSLDLCDGDRWREQA 180
polypeptides, expression vectors, genetically engineered host cells for expression of the polypeptides, and antibodies which specifically bind RG1 or its immunologically active fragment (especially a polypeptide comprising amino acid 28-46, 77-91, 188-210, or 263-274 of RG1). It also provides methods for utilizing the polynucleotides, polypeptides and antibodies in research, diagnosis and therapeutic applications. Thus, the antibodies can be used for diagnosis and/or detection of RG1 expression, or can be conjugated to a therapeutic application agent, such as a cytotoxic agent, for administration to patient for treatment of diseases characterised by RG1 activity or expression, such as prostate
                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                  9
                                                                                                                                                                                                                                                                                                           9
                                                                                                                                                                                                                                                                               1 MENPSPAAALGKALCALLLATLGAAGQPLGGESICSARALAKYSITFTGKWSQTAFPKQY
                                                                                                                                                                                                                                                                                               ALDLY PYDAGTDSGFTFSSPNFATIPQDTVTEITSSSPSHPANSFYYPRLKALPPIARVT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LVRLRQSPRAFIPPAPVLPSRDNEIVDSASVPETPLDCEVSLWSSWGLCGGHCGRLGTKS
                                                                                                                                                                                                                                                      ;
0
                                                                                                                                                                                                                          99.2%; Score 1742; DB 22; Length 331; 99.4%; Pred. No. 1.7e-162;
                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                     2;
                                                                                                                                                                                                                                                    0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RTRYVRVQPANNGSPCPELEEEAECVPDNCV 331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAW70589 standard; Protein; 331 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Adhesion-modulating protein zsig25.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        98WO-US07117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                97US-0043421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  97US-0049288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (first entry)
                                                                                                                                                                                                                       Query Match
Best Local Similarity 99.4
Matches 329; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (ZYMO ) ZYMOGENETICS INC.
                                                                                                                                                                                 331 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WO9845442-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       10-APR-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  11-JUN-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                10-APR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            21-JAN-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           15-0CT-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sheppard PO;
                                                                                                                                                                                Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAW70589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             œ
                                                                                                                                                                                                                                                                                                                                     61
                                                                                                                                                                                                                                                                                                                                                                                          121
                                                                                                                                                                                                                                                                                                                                                                                                                    121
                                                                                                                                                                                                                                                                                                                                                                                                                                                 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       301
                                                                                                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAW70589
                                                                                                                                                                                                                                                                                                                                                               a
 55555555555×8
                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       q
                                                                                                                                                                                                                                                                                                                                                                                                                                                ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
```

```
;
0
                                                                                                                                                                                   The present sequence represents a protein designated zsig25. The zsig25 protein is an adhesion-modulating protein expressed at very high level in prostate cells. The protein is useful as a diagnostic marker for prostatic carcinoma and B-cell cancers, possibly also for infertility, and as a reagent for separating cancerous and non-cancerous cells. The products may also be used to diagnose or treat Wolf-Hirschhorn syndrome, associated with a deletion in the region of chromosome 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Human; PRO; EST; expressed sequence tag; PCR primer; hybridisation; probe; blood coagulation disorder; cancer; cellular adhesion disorder; secreted protein; transmembrane protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61 PLFRPPAQWSSLLGAAHSSDYSMWRKNQYVSNGLRDFAERGEAWALMKEIEAAGEALQSV 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              121 hevfsapavpsgtggtsaelevgrrhslvsfvvrlvpspdwfvgvdsldlcdgdrwrega 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           241 LVRLRQSPRAFIPPAPVLPSRDNEIVDSASVPETPLDCEVSLWSSWGLCGGHCGRLGTKS 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9
                                                        Néw zsig25 protein and related nucleic acid, fusion proteins, vectors, transformed cells - and antibodies, involved in modulation of adhesion, used for diagnosis and treatment of prostatic and B-cell tumours, stimulation of haematopoietic cells, treatment of
                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 MENPSPAAALGKALCALLLATLGAAGQPLGGESICSARALAKYSITFTGKWSQTAFPKQY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HAVFSAPAVPSGTGQTSAELEVQRRHSLVSFVVRIVPSPDWFVGVDSLDLCDGDRWREQA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ALDLYPYDAGTDSGFTFSSPNFATIPQDTVTEITSSSPSHPANSFYYPRLKALPPIARVT
                                                                                                                                                                                                                                                                                                                                                                                                             ;
                                                                                                                                                                                                                                                                                                                                                                            Length 331;
                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                            99.1%; Score 1741; DB 19; 99.1%; Pred. No. 2.1e-162;
                                                                                                                                                                                                                                                                                                                                                                                                           1; Mismatches
                                                                                                                                                                                                                                                                                                 (p16.3) where the zsig25 gene is located.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RTRYVRVQPANNGSPCPELEEEAECVPDNCV 331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAY41721 standard; Protein; 331 AA
                                                                                                                                                         Claim 7; Page 111; 161pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Human PRO866 protein sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 07-DEC-1999 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                           Matches 328; Conservative
                                                                                                                          immune deficiency etc.
              1998-557522/47
                                                                                                                                                                                                                                                                                                                                                                                            Local Similarity
                                                                                                                                                                                                                                                                                                                                331 AA;
                             N-PSDB; AAV63241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      W09946281-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    16-SEP-1999
                                                                                                                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAY41721;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAY41721
ŏλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      pp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              dC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Dp
```

```
98US-00811071.
98US-0081103.
98US-00811203.
98US-00811217.
98US-0081197.
98US-00811952.
98US-0081952.
98US-0081952.
98US-0082569.
                                                                                                                       98US-0079664.
98US-0079689.
98US-0079728.
98US-0079786.
                                                                                                                                                                                     98US-0080165.
98US-0080194.
98US-0080327.
98US-0080328.
                                                                                                                                                                                                                    98US-0080333.
98US-0080334.
98US-0081049.
98US-0081070.
                                                                                                                                                                                                                                                                                                                                               98US-0082804.
98US-0082767.
98US-0082796.
                                                                                                                                                                                                                                                                                                                                                                      98US-0083336.
98US-0083322.
98US-0083392.
                                                                                                                                                              98US-0079923.
98US-0080105.
98US-0080107.
            98US-0077450.
98US-0077632.
98US-0077641.
98US-0077649.
                                                                                                 98US-0079294.
98US-0079656.
98US-0079663.
                                                                                                                                                                                                                                                                                                                                                                                                                    98US-0083500.
                                                                                                                                                                                                                                                                                                                                                                                                                                                   98US-0083559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   98US-0084600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          98US-0084639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  98US-0084640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       98US-0085338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 98US-0085339
98US-0085573
                                                                          98US-0078910.
98US-0078936.
98US-0078939.
                                                                                                                                                                                                                                                                                                                                                                                                    98US-0083496
                                                                                                                                                                                                                                                                                                                                                                                                             98US-0083499
                                                                                                                                                                                                                                                                                                                                                                                                                              98US-0083545
                                                                                                                                                                                                                                                                                                                                                                                                                                             980S-0083558
                                                                                                                                                                                                                                                                                                                                                                                                                                                            98US-0083742
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    98US-0084366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           98US-0084414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           98US-0084598
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           98US-0084627
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  98US-0084637
                                                                                                                                                                                                                                                                                                                                                                                              98US-0083495
                                                                                                                                                                                                                                                                                                                                                                                                                                    98US-0083554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    98US-0084441
                                                    98US-0078004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   05-MAY-1998;
06-MAY-1998;
06-MAY-1998;
07-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -MAY-1998;
-MAY-1998;
                                                                                                                                                                                                                                                                                                                         21-APR-1998;
22-APR-1998;
22-APR-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 13-MAY-1998;
15-MAY-1998;
                                                                                                                                                             30 MAR-1998;
31-MAR-1998;
31-MAR-1998;
31-MAR-1998;
31-MAR-1998;
01-APR-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                             29-APR-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                     29-APR-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    -MAY-1998,
                                                                                                                                -MAR-1998;
-MAR-1998;
-MAR-1998;
-MAR-1998;
                                                                                                                                                                                                                                                                                                                                                22-APR-1998;
23-APR-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                              29-APR-1998;
                                                                                                                                                                                                                                                            09-APR-1998;
09-APR-1998;
                                                                                                                                                                                                                                                                            09-APR-1998;
                                                                                                                                                                                                                                                                                                                                                                23-APR-1998;
                                                                                                                                                                                                                                                                                                                                                                      27-APR-1998
28-APR-1998
                                                                                                                                                                                                                                                                                                                                                                                       29-APR-1998
                                                                                                                                                                                                                                                                                                                                                                                               29-APR-1998
                                                                                                                                                                                                                                                                                                                                                                                                                       29-APR-1998
                                                                                                 MAR-1998;
MAR-1998;
                                                                                                                                                                                                                                                                                    15-APR-1998;
                                                                                                                                                                                                                                                                                           15-APR-1998;
                                                    13-MAR-1998;
17-MAR-1998;
                                                                                          MAR-1998
                                                                                                                                                                                                                      01-APR-1
                                                                                                                                                                                                                                                      08-APR-1
                                                                                                                                                                                                                               01-APR-
                                                                                                                                                                                                               01-APR-
                                                                                                                                                                                                                                                                                                                                                                                               PR
```

```
The present invention describes secreted and transmembrane polypeptides and their polynucleotides. The nucleotide sequences are useful as sources of probes, primers, for chromosome mapping, and for generation of antisense sequences. They can also be used to create transgenic animals. The proteins can be used to treat a variety of diseases and disorders, depending on their function. Diseases that may be treated include blood coagulation disorders, cancers and cellular adhesion disorders. They may also be used to raise antibodies. AA234891 to AA234338, and AAY41685 to AAY41774 represent polynucleotide and polypeptide sequence given in the exemplification of the present
                                                                                                                                                                                                                                                                                                                        New secreted and transmembrane polypeptides and their polynucleotides, useful for treating blood coagulation disorders, cancers and cellular adhesion disorders -
                                                                                                                                                                                                                                                           Baker KP, Chen J;
                                                                                                                                                                                                                                                              Gurney A, Yuan J,
                                                                                                                                                                                                                                                                                                                                                                                   Claim 12; Fig 87; 530pp; English.
                                98US-0085689.
98US-0085697.
98US-0085700.
98US-0086703.
98US-0086392.
98US-0086414.
98US-0086418.
98US-0086418.
98US-0087098.
98US-0087106.
98US-0087106.
                                                                                                                                                                                                                                     (GETH ) GENENTECH INC.
                                                                                                                                                                                                                                                                Wood WI, Goddard A,
                                                                                                                                                                                                                                                                                         WPI; 1999-551358/46.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          331 AA;
                                                                                                                                                                                                                                                                                                      N-PSDB; AAZ34089
                                                             988;
                                                                                                     1998;
                      15-MAY-1998;
15-MAY-1998;
                                                                                        1998;
                                                                                                                 22-MAY-1998;
22-MAY-1998;
                                                                                                                                            32-MAY-1998;
                                                                                                                                                         28-MAY-1998;
                                                                                                                                                                                                          11-SEP-1998;
                                                                                                                                                                      28-MAY-1998
                                                                                                                                                                                  28-MAY-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence
                                                 -MAY-1
                                                                                        18-MAY-1
                                                                             5-MAY-
                                                                                                   22-MAY-
```

LVRLRQSPRAFIPPAPVLPSRDNEIVDSASVPETPLDCEVSLWSSWGLCGGHCGRLGTKS 300 9 0; Gaps 121 HAVFSAPAVPSGTGQTSAELEVQRRHSLVSFVVRIVPSPDWFVGVDSLDLCDGDRWREQA 181 aldlypydagtdsgftfsspnfatipgdtvteitssspshpansfyyprikalppiarvt 1 MENPSPAAALGKALCALLLATLGAAGQPLGGESICSARALAKYSITFTGKWSQTAFPKQY A81 ALDLYPYDAGTDSGFTFSSPNFATIPQDTVTEITSSSPSHPANSFYYPRLKALPPIARVT 99.1%; Score 1741; DB 20; Length 331; 99.1%; Pred. No. 2.1e-162; Live 1; Mismatches 2; Indels 0; RIRYVRVQPANNGSPCPELEEEAECVPDNCV 331 Bes: Local Similarity 99.1 Matches 328; Conservative Query Match 121 241 301 q .gc ò d Š g Qγ · 0. οy

rtryvrvqpanngspcpeleeeaecvpdncv 331

301

ö

```
AAC78458 to AAC78599 represent polynucleotide and EST (expressed sequence tag) sequences which encode secreted or transmembrane PRO polypeptides. The PRO polynucleotides and polypeptides have cytostatic activity. The polynucleotides and polypeptides can be used for detecting the presence of PRO polypeptides in samples, for linking bioactive molecules to cells and for modulating biological activities of cells, using the polypeptides for specific targeting. The polypeptide for specific targeting. The polypeptide pairs provide specific targeting of bioactive molecules to cells. AAC78600 to AAC78987 represent PCR primers and probes used in the isolation of the PRO polynucleotide sequences.
                                                                                                                                              Human; secreted protein; transmembrane protein; PRO; EST; cytostatic; expressed sequence tag; detection; cancer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Novel PRO polypeptides and polynucleotides used in detection methods, to target bloactive molecules to specific cells, and to modulate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Hillan KJ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ashkenazi AJ, Baker KP, Botstein D, Desnoyers L, Eaton DI Ferrara N, Filvaroff E, Fong S, Gao W, Gerber H, Gerrits Goddard A, Godowski PJ, Grimaldi CJ, Gurney AL, Hillan KJ Kljavin IJ, Kuo SS, Napier MA, Pan J, Paoni NF, Roy MA; Shelton DL, Stewart TA, Tumas D, Williams PM, Wood WI;
                                                                                                                 Human PRO866 (UNQ435) protein sequence SEQ ID NO:236.
                          AAB44277 standard; Protein; 331 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Claim 12; Fig 87; 636pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                            99WO-US28313.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          99WO-US28565.
99WO-US30095.
                                                                                                                                                                                                                                                                              18-FEB-2000; 2000WO-US04341
                                                                                                                                                                                                                                                                                                                                                                                                                                                             99WO-US28551,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       99WO-US31243.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   99WO-US31274.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2000WO-US00219.
                                                                                                                                                                                                                                                                                                                                         99US-0126773
                                                                                                                                                                                                                                                                                                                                                         99US-0130232
                                                                                                                                                                                                                                                                                                                                                                      99US-0131445
                                                                                                                                                                                                                                                                                                                                                                                       99US-0134287
                                                                                                                                                                                                                                                                                                                                                                                                   99US-0141037
99US-0145698
                                                                                                                                                                                                                                                                                                                                                                                                                                99US-0162506
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2000WO-US00376
                                                                                       (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (GETH ) GENENTECH INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cellular activities -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WPI; 2000-611443/58.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             N-PSDB; AAC78507
                                                                                                                                                                                                                       WO200053756-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             06-JAN-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                         02-DEC-1999;
02-DEC-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -JAN-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                06-JAN-2000;
                                                                                                                                                                                                                                                    14-SEP-2000
                                                                                                                                                                                                                                                                                                                                                      21-APR-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     30-DEC-1999;
                                                                                                                                                                                                                                                                                                                                         39-MAR-1999
                                                                                                                                                                                                                                                                                                                                                                                                   3-JUN-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                              30-NOV-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        16-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    30-DEC-1999
                                                        AAB44277;
                                                                                                                                                                                                                                                                                                                                                                                    14-MAY-1
RESULT 10
               AAB44277
```

```
Human: immune related disease; diagnosis; antiinflammatory; cardiant;
W dermatological; antiathritic; antirheumatic; immunosuppressive;
W haemostatic; antithyroid; antidiabetic; nootropic; neuroprotective;
W antianaemic; hepatotropic; virucide; antipalergic;
w antiasthmatic; systemic lupus erythematosus; rheumatoid arthritis;
w orteoarthritis; spondloarthropathy; systemic selerosis; sarcoidosis;
w diopethic inflammatory myopathy; Sjogren's syndrome; thyroiditis;
w diopethic inflammatory myopathy; Sjogren's syndrome; thyroiditis;
w diopethic inflammatory myopania; immune-mediated renal disease;
w disease; hepatobilary disease; Whipple's disease;
w inflammatory bowel disease; gluten-sensitive enteropathy;
autoimmune disease; immune-mediated skin disease;
w mmunological disease; transplantation associated disease;
w graft rejection; graft-versus-host-disease.
                                                                                                                                    121 HAVFSAPAVPSGTGQTSAELEVQRRHSLVSFVVRIVPSPDWFVGVDSLDLCDGDRWREQA 180
                                                                                                                    61 PLFRPPAQWSSLLGAAHSSDYSMWRKNQYVSNGLRDFAERGEAWALMKEIEAAGEALQSV 120
                                                                                                                                                                                              181 ALDLYPYDAGTDSGFTFSSPNFATIPQDTVTELTSSSPSHPANSFYYPRLKALPPIARVT 240
                                                                                                                                                                                                                                                         LVRLRQSPRAFIPPAPVLPSRDNEIVDSASVPETPLDCEVSLWSSWGLCGGHCGRLGTKS 300
                                                                          Gaps
                                                           MENPSPAAALGKALCALLLATLGAAGQPLGGESICSARALAKYSITFTGKWSQTAFPKQY 60
       Length 331;
                                     Indels
   Score 1741; DB 21;
Pred. No. 2.1e-162;
                                  1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Human PRO866 protein UNQ435 SEQ ID NO:258
                                                                                                                                                                                                                                                                                                                                                             301 RTRYVRVQPANNGSPCPELEEEAECVPDNCV 331
                                                                                                                                                                                                                                                                                                                                                                              301 rtryvrvqpanngspcpeleeeaecvpdncv 331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAB33465 standard; Protein; 331 AA.
    99.18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      99US-0132371.
99US-0134287.
99WO-US12252.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    02-MAR-2000; 2000WO-US05841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   99WO-US05028
99US-0123618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            99US-0131445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                99US-0123957
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               99US-0128849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             99WO-US08615
Query Match
Best Local Similarity 99.18
Matches 328; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           40200053758-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            29-JAN-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        20-APR-1999;
28-APR-1999;
04-MAY-1999;
14-MAY-1999;
02-JUN-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              12-MAR-1999;
23-MAR-1999;
12-APR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          14-SEP-2000.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  08-MAR-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   10-MAR-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAB33465;
                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAB33465
                                                            ò
                                                                                                                ď
                                                                                                                                               CC
                                                                                                                                                                             õ
                                                                                                                                                                                                  .
연
                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                    d
                                                                                                                                                                                                                                                                                                   QΣ
                                                                                                                                                                                                                                                                                                                                                             ò
```

Eaton DL; Gerritsen ME;

331 AA;

Sequence

g

121 HAVFSAPAVPSGTGQŢSAELEVQRRHSLVSFVVRIVPSPDWFVGVDSLDLCDGDRWREQA 180

61 PLFRPPAQWSSLLGAAHSSDYSMWRKNQYVSNGLRDFAERGEAWALMKEIEAAGEALQSV 181 ALDLYPYDAGTDSGFTFSSPNFATIPQDTVTEITSSSPSHPANSFYYPRLKALPPIARVT

301 RIRYVRVQPANNGSPCPELEEEAECVPDNCV 331

AAY95349 standard; Protein; 331 AA.

AAY95349

Human PRO866 antitumour protein.

(first entry)

25-SEP-2000

AAY95349;

241 LVRLRQSPRAFIPPAPVLPSRDNEIVDSASVPETPLDCEVSLWSSWGLCGGHCGRLGTKS 300

δy

```
autoimmune or immune-mediated skin diseases, allergic diseases, immunological diseases of the lung, and transplantation associated diseases including graft rejection and graft-versus-host-disease.

AAC58397 to AAC58578 represent PCR primers and hybridisation probes used in the isolation of human PRO sequences. AAC58579 to AAC5862 and AAB33414 to AAB33477 represent human PRO polynucleotide and protein sequences siven in the exemplification of the present invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          The present invention describes sixty four human PRO proteins which can be used in the treatment of immune related diseases. The human PRO proteins, anti-PRO antibodies, agonists and antagonists are useful for treating and diagnosing immune related disorders. The disorders are selected from systemic lupus erythematosus, rheumatoid arthritis, osteonthritis, juvenile chronic arthritis, spondyloarthropathies, systemic solerosis, idiopathic inflammatory myopathies, Sjogren's syndrome, systemic vasculitis, sarcoidosis, autoimmune haemolytic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sixty four PRO polypeptides, useful in the diagnosis and treatment of immune related disorders, e.g. systemic lupus erythematosis, rheumatoid arthritis, osteoarthritis, thyroiditis and diabetes mellitus -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            anaemia, autoimmune thrombooytopaenia, thyroidilis, diabetes mellitus, immune-mediated renal disease, demyelinating diseases of the central and peripheral nervous systems, hepatobiliary diseases, inflammatory bowel disease, gluten-sensitive enteropathy and Whipple's disease,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Henzel W;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gurney AL, Hebert C, He
D, Shelton DL, Smith V;
Wood WI, Yan M;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ashkenazi AJ, Baker KP, Goddard A,
Kabakoff RC, Lu Y, Pan J, Pennica
Stewart TA, Tumas D, Watanabe CK,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Claim 33; Fig 104; 309pp; English.
                                                                                99WO-US20594
                                                                                                                                                                                                                                                                                                                                                                                                      2000WO-US00376
                                                                                                                                                                                                                                                                                                                                                                                                                                        2000WO-US04341
2000WO-US04342
                                                                                                                99WO-US21090
                                                                                                                                                                                                                                                                                    99WO-US28564
                                                                                                                                                                                                                                                                                                                                       6660ESD-0M66
                                                                                                                                                                                                                                                                                                                                                     99WO-US31274
                                                                                                                                                                                                                                                                                                                                                                      2000WO-US00219
                                                                                                                                                                                                                                                                                                                                                                                                                        2000WO-US03565
                                 99US-0145698
                                                                  99WO-US20111
                                                                                                                                   99WO-US21547
                                                                                                                                                   99WO-US23089
                                                                                                                                                                 99US-0162506
                                                                                                                                                                                     99WO-US28214
                                                                                                                                                                                                                    99WO-US28409
                                                                                                                                                                                                                                    99WO-US28301
                                                                                                                                                                                                                                                        99WO-US28634
                                                                                                                                                                                                                                                                                                       99WO-US28565
                                                                                                                                                                                                                                                                                                                       99WO-US30095
                                                                                                                                                                                                                                                                                                                                                                                        2000WO-US00277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2000WO-US04414
                                                                                                                                                                                                                                                                    99WO-US28551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (GETH ) GENENTECH INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 2000-572271/53.
N-PSDB; AAC58630.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      331 AA;
                                                                                                                                                                                                                                                                                                                                                                                                      06-JAN-2000;
11-FEB-2000;
                                                                                                                                                                 29-OCT-1999;
29-NOV-1999;
30-NOV-1999;
30-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                        06-JAN-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                        18-FEB-2000;
18-FEB-2000;
                                                                                                                                                                                                                                                                                                                                                                        05-JAN-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         22-FEB-2000;
                                                                                                                1999;
                                                                                                                                                                                                                                                                                    02-DEC-1999;
                                                                                                                                                                                                                                                                                                                                       20-DEC-1999;
30-DEC-1999;
                                                                                                                                                                                                                                    01-DEC-1999
                                                                                                                                                                                                                                                                      -DEC-1999
                                                                                                                                                                                                                                                                                                     02-DEC-1999
                                                                                                                                                                                                                                                                                                                     16-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence
                                                                                                                                                   -0CT-1
                                                                                                                  .5-SEP-
%XCCCCCCCCCCCCCCCCCC
```

```
PRO866; human; antitumour; tumour; therapy; cytostatic; breast cancer; colorectal cancer; uterine cancer; prostate cancer; lung cancer; bladder cancer; uterine cancer; prostate cancer; lung cancer; bladder cancer; central nervous system cancer; melanoma; leukaemia; neoplasm.
                                                                                                                                                                                                                                                                                                                 /note= "protein kinase phosphorylation site"
                                                                                                                                                                                                                                                                                                                                  /note= "glycosaminoglycan attachment site"
                                                                                                                                                                              'note= "N-myristoylation"
                                                                                                                                                                                               "N-myristoylation"
                                                                                                                                                                                                                    "N-myristoylation"
                                                                                                                                                                                                                                                                            "N-myristoylation"
                                                                                                                                                                                                                                                                                            /note= "N-myristoylation"
144..148
                                                                                                                                                                                                                                      "N-myristoylation"
                                                                                                                                                                                                                                                         "N-myristoylation"
                                                                                                                                         'label= Signal_peptide
                                                                                                                       Location/Qualifiers
                                                                                                                                                   27..331
/label= PRO866
                                                                                                                                                                                                                                                                                                                                                                                            99WO-US28565
                                                                                                                                                                                                                                                                                                                                                                                                              98US-0113296.
99WO-US05028.
                                                                                                                                                                                                                            ..140
                                                                                                                                                                                                                                                                                     . 296
                                                                                                                                                                                                          .138
                                                                                                                                                                                                                                                                                                                          .135
                                                                                                                                                                                                                                                                   . 293
                                                                                                                                                                                                                                                190..196
                                                                                                                                                                                                                     note=
                                                                                                                                                                                                                                                            /note=
                                                                                                                                                                                                                                                                             /note=
                                                                                                                                                                                                                                         note=
                                                                                                                                                                                                 note=
                                                                                                                                                                                                                                                                                                                                                       40200037638-A2
                                                                                                                                                                     Modified-site
                                                                                                                                                                                        Modified-site
                                                                                                                                                                                                                              Modified-site
                                                                                                                                                                                                                                                 Modified-site
                                                                                                                                                                                                                                                                                     Modified-site
                                                                                                                                                                                                                                                                                                        Modified-site
                                                                                                      Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                              22-DEC-1998;
08-MAR-1999;
                                                                                                                                                                                                                                                                                                                                                                         29 - JUN-2000
                                                                                                                                Peptide
                                                                                                                                                    Protein
                                                                                                                                                                                                                                                                                                                           Region
```

. 0

Gaps

;

Indels

99.1%; Score 1741; DB 21; Length 331; 99.1%; Pred. No. 2.1e-162;

1 MENPSPAAALGKALCALLLATLGAAGQPLGGESICSARALAKYSITFTGKWSQTAFPKQY 60

1; Mismatches

Best Local Similarity 99.1 Matches 328; Conservative

ŏ

Query Match

```
Novel composition to inhibit neoplastic cell growth or for treating tumor in mammal comprises polypeptides PRO179, PRO207, PRO320, PRO219, PRO221, PRO224, PRO328, PRO301, PRO526, PRO362, PRO369 or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61 PLFRPPAQWSSLLGAAHSSDYSMWRKNQYVSNGLRDFAERGEAWALMKEIEAAGEALQSV 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               121 HAVFSAPAVPSGTGQTSAELEVQRRHSLVSFVVRIVPSPDWFVGVDSLDLCDGDRWREQA 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LVRLRQSPRAFIPPAPVLPSRDNEIVDSASVPETPLDCEVSLWSSWGLCGGHCGRLGTKS 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 MENPSPAAALGKALCALLLATLGAAGQPLGGESICSARALAKYSITFTGKWSQTAFPKQY 60
                                                                                                                                                                                                                                                                                                                                                                    The present sequence is that of human antitumour protein PRO866, as deduced from a foetal kidney CDNA clone (see AAA49728). PRO866 shows homology to members of the mindin/Spondin family of proteins. A claimed method for inhibiting the growth of a tumour cell comprises exposing the tumor cell to PRO179, PRO210, PRO221, PRO224, PRO328, PRO310, PRO526, PRO326, PRO586, PRO599 or PRO866 (see AAY95337-49), their agonists or chimeric polypeptides incorporating them. The tumour is especially a cancer selected from breast, ovarian, renal, colorectal, uterine, prostate, lung, bladder and central nervous system cancer, melanoma and leukaemia. Methods for the recombinant expression of the antitumour proteins are also provided.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ALDLYPYDAGTDSGFTFSSPNFATIPQDTVTEITSSSPSHPANSFYYPRLKALPPIARVT
                                                                                                                                                                  Marsters SA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 331;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                 Godowski PJ, Gurney AL,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match 99.1%; Score 1741; DB 21;
Best Local Similarity 99.1%; Pred. No. 2.1e-162;
Matches 328; Conservative 1; Mismatches 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RTRYVRVQPANNGSPCPELEEEAECVPDNCV 331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        301 rtryvrvqpanngspcpeleeeaecvpdncv 331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAG75576 standard; Protein; 385 AA.
                                                                                                                                                                                                                                                                                                                                           Claim 19; Fig 26; 172pp; English.
                                                                                                                                                                                Wood WI;
               99US-0131445.
                                               99US-0144758.
99US-0145698.
                                                                              99WO-US21090
99WO-US21547
                                                                                                                                                               Goddard A,
                                                                                                                                                                              Pitti RM,
                                                                                                                              (GETH ) GENENTECH INC
                                                                                                                                                                                                              WPI; 2000-442668/38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      331 AA;
                                                                                                                                                                                                                             N-PSDB; AAA49728
                              14-MAY-1999;
20-JUL-1999;
26-JUL-1999;
                                                                                                                                                             Ashkenazi AJ,
                                                                              15-SEP-1999;
15-SEP-1999;
                                                                                                                                                                                Napier MA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAG75576;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          301
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
```

0; Gaps

```
cancer associated nucleic acid molecules (N) and proteins (P), where
the proteins are collectively known as colon cancer antigens. The colon
cancer antigens have cytostatic activity and can be used in gene
therapy and vaccine production. N and P may be used in gene
therapy and vaccine production. N and P may be used in the prevention,
diagnosis and treatment of diseases associated with inappropriate P
expression. For example, N and P may be used to treat disorders
associated with decreased expression by rectifying mutations or deletions
in a patient's genome that affect the activity of P by expressing
inactive proteins or to supplement the patients own production of P.
Additionally, N may be used to produce the colon cancer-associated Ps,
by inscrting the nucleic acids into a host cell and culturing the cell
to express the proteins. N and P can be used in the prevention, diagnosis
and treatment of colorectal carcinomas and cancers. Antilities to AAH37204
and AAB77789 represent sequences used in the exemplification of the
present invention.

N.B. Pages 666 to 682 and page 7053 of the sequence listing were
missing at time of publication, meaning no sequences are present for
SEQ ID NO:1027 to 1052, 7921 and 7922.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Nucleic acids encoding 4277 human colon cancer-associated polypeptides, useful for preventing, diagnosing and/or treating colorectal cancers -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAH32943 to AAH37195 and AAG73514 to AAG77788 represent human colon
                                                                                                    colon cancer; colon cancer antigen; diagnosis; detection;
                                                          Human colon cancer antigen protein SEQ ID NO:6340
                                                                                                                                                                                                                                                                                                                                                                                                                             Rosen CA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Claim 11; Page 7793-7795; 9803pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                             Birse CE,
                                                                                                                                                                                                                                                                                                                                                                                     (HUMA-) HUMAN GENOME SCI INC
                                                                                                                                                                                                                                                                                                                         99US-0157137.
99US-0163280.
                                                                                                                                                                                                                                                                                 28-SEP-2000; 2000WO-US26524.
                    (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                             Ruben SM, Barash SC,
                                                                                                                         colorectal carcinoma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2001-235357/24.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     N-PSDB; AAH34981
                                                                                                                                                                                                    WO200122920-A2.
                                                                                                                                                                Homo sapiens.
                                                                                                                                                                                                                                                                                                                         29-SEP-1999;
03-NOV-1999;
                                                                                                                                                                                                                                           05-APR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence
```

; 0

0; Gaps

Length 385; Indels

> ...₩ g ŏ . Q Qγ

1 MENPSPAAALGKALCALLLATLGAAGQPLGGESICSARALAKYSITFTGKWSQTAFPKQY

99.1%; Score 1740; DB 22; 99.1%; Pred. No. 3.2e-162; iive 0; Mismatches 3;

Best Local Similarity 99.19 Matches 328; Conservative

Query Match

```
Secreted protein; human; autoimmune disorder; multiple sclerosis; ulcer; systemic lupus erythematosus; rheumatoid arthritis; anaemia; stroke; hamanatopoiesis regulation; tissue regrowth; wound healing; hamophilia; Alzheimer's disease; Parkinson's disease; Shy-drager syndrome; cancer; contraceptive; infection; growth inhibition; hyperproliferative disorder;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  This invention relates to 59 human secreted proteins and the nucleotide sequences encoding them. Sequences AAC59788-C59846 and AAB34687-B34745 represent the proteins and their encoding nucleotide sequences, and sequences AAB34746-B34771 represent fragments of the proteins. Probes for the DNA sequences are represented by sequences AAC59847-C59596. The
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Novel proteins and polypeptides useful for the treatment of e.g multiple sclerosis, systemic lupus erythmatosus, rheumatoid arthritis, cancer, Alzheimer's disease, Parkinson's disease, stroke, anemia and
241 LVRLRQSPRAFIPPAPVLPSRDNEIVDSASVPETPLDCEVSLWSSWGLCGGHCGRLGTKS 300
             Human secreted protein fragment encoded by DNA clone vp22 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Hoffman H, Hall J, Rapiejko P;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Disclosure; Page 477-478; 493pp; English.
                                                                        301 RTRYVRVQPANNGSPCPELEEEAECVPDNCV 331
                                                                                                                                                             AAB34753 standard; Protein; 249 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                990S-0149639.
990S-0157247.
990S-0167824.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      99US-0124808.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          17-MAR-2000; 2000WO-US07285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2000US-0182711
                                                                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Valenzuela D, Yuan O,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (ALPH-) ALPHAGENE INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WPI; 2000-638211/61.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      N-PSDB; AAC59794
                                                                                                                                                                                                                                                                                                                                                                                                                 WO200055375-A1
                                                                                                                                                                                                                                                                                                                                                                                       Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                15-FEB-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      7-MAR-1999:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     17-MAR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-OCT-1999;
29-NOV-1999;
                                                                                                                                                                                                                      26-JAN-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                              21-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   17-AUG-1999;
                                                                                                                                                                                                                                                                                                                                                           psoriasis
                                                                                                                                                                                          AAB34753;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ulcers
                                                                                                                                              AAB34753
                                                                                                                                                                                                                                                                                                   qq
                                                         ŏ
                                                                                   q
                                                                                                                                                                                          XX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                      X
```

nucleotide sequences are useful as nutritional sources or supplements and in research. The proteins are useful for treating immune deficiency and disorders, which may be genetic or resulting from infections, autoimmune disorders such as multiple sclerosis, systemic lupus erythmatosus, rheumatoid arthritis, and for treating myeloid or lymphoid profeins are also useful in compositions for bone, cartilage, tendon, ligament and/or nerve tissue growth or regeneration, for wound healing,

proteins exhibit neuroprotective, dermatological, immunosuppressive, antiinflammatory, antianaemic, nootropic, antiparkinsohian cerebroprotective, haemostatic, vulnerary, cytostatic, antipsoriatic, antibacterial, virucide, and fungicide activity. The proteins and

```
tissue repair and replacement and in the treatment of wounds, incisions and ulcers. Other uses include in the treatment of central and peripheral nervous system and neuropathies such as Alzheimer's and Parkinson's diseases and Shy-Drager syndrome, and mechanical and parkinson's diseases and Shy-Drager syndrome, and mechanical and straumatic disorders, such as spinal cord disorders, head trauma and stroating coaqulation disorders such as haemophilias. The protein and corder uses for the protein include for inhibiting the growth, infection or function of, or killing, infections agents such as bacteria; such as height, weight, hair colour, effecting bodily characteristics such as height, weight, hair colour, effecting bodily characteristics or brotein, carbohydrate, virange or elimination of dietary fat, lipid, processing, utilization, storage or elimination of dietary fat, lipid, protein, carbohydrate, vitamins, minerals, cofactors, effecting behavioural characteristics, providing analgesic effects and for treating hyperproliferative disorders such as psoriasis.
                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  83 MWRKNQYVSNGLRDFAERGEAWALMKEIEAAGEALQSVHAVFSAPAVPSGTGQTSAELEV 142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  263 NEIVDSASVPETPLDCEVSLWSSWGLCGGHCGRLGTKSRTRYVRVQPANNGSPCPELEEE 322
                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Human secreted protein clone yk143_1 protein sequence SEQ ID NO:202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            proliferative; differentiative; chemotactic; chemokinetic; vaccine; thrombolytic; antlinflammatory; cytostatic; immunosuppressive;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Human; secreted protein; immunostimulatory; haemostatic; cytokine;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         143 QRRHSLVSFVVRIVPSPDWFVGVDSLDLCDGDRWREQAALDLYPYDAGTDSGFTFSSPNF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 203 ATIPQDTVTEITSSSPSHPANSFYYPRLKALPPIARVTLVRLRQSPRAFIPPAPVLPSRD
                                                                                                                                                                                                                                                                                                                                                                                                                   .;
0
                                                                                                                                                                                                                                                                                                                                                                                75.7%; Score 1329; DB 21; Length 249; 100.0%; Pred. No. 3.8e-122; Live 0; Mismatches 0; Indels 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAY73490 standard; Protein; 299 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            98US-0096824.
98US-0099843.
98US-0099950.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          99WO-US10843
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             98US-0085472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                     Matches 249; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                    Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             241 aecvpdncv 249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          323 AECVPDNCV 331
                                                                                                                                                                                                                                                                                                                                249 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gene therapy.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      W09958642-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        14-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         29-FEB-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 18-NOV-1999.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             14-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                17-AUG-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             11-SEP-1998;
11-SEP-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAY73490;
                                                                                                                                                                                                                                                                                                                                  S-squence
                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAY73490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ŏ
```

```
Novel polynucleotides and proteins having biological activities which make them suitable for treating, preventing or ameliorating medical conditions in humans or animals -
                                                                                                                                 Wong GG, Clark HF, Fechtel K, Agostino MJ;
98US-0100424.
98US-0102329.
98US-0110159.
98US-0111799.
98US-011415.
99US-0248059.
99US-0248059.
                                                                                                            (GEMY ) GENETICS INST INC.
                                                                                                                                                   WPI; 2000-053095/04.
N-PSDB; AAZ52575.
                      09-OCT-1998;
11-DEC-1998;
14-DEC-1998;
31-DEC-1998;
 15-SEP-1998;
29-SEP-1998;
                                                                  10-FEB-1999;
06-APR-1999;
                                                                                      13-MAY-1999;
```

The present invention describes human secreted proteins encoded by polynucleotides obtained from adult testes, foetal brain, adult brain, bain (foetal and adult), foetal kidney, adult spleen, and adult thymus contains are predicted to have biological activities which would make them suitable for treating, contains a meliorating medical conditions in humans and animals. Suggested activities include nutritional activity, cytokine and cell proliferation/differentiation activity, veromina activity, contains or suppressing activity, haematopoiesis regulating activity, themetopoiesis regulating activity, chemotactic/chemotinetic activity, anti-inflammatory activity, cadherin/rumour invasion suppressor activity, anti-inflammatory activity, cadherin/rumour invasion suppressor activity, anti-inflammatory activity, cadherin/rumour invasion suppressor activity, anti-inflammatory activity, adherin/rumour invasion suppressor activity, anti-inflammatory activity, repepautic compositions are also stated to be useful for gene therapy. Therapeutic compositions are also presently valuable for veterinary applications. AAZ52375 to AAZ52581 encode human secreted proteins, and AAY73390 to AAY73500 Claim 211; Page 710-711; 730pp; English. $\overset{\circ}{\times}$ 55555555555555555555

299 AA; Sequence

5 Gaps 62.7%; Score 1101.5; DB 21; Length 299; 90.3%; Pred. No. 1e-99; ive 5; Mismatches 15; Indels 3; Query Match 62.7 Best Local Similarity 90.3 Matches 214; Conservative

83 MWRKNQYVSNGLRDFAERGEAWALMKEIEAAGEALQSVHAVFSAPAVPSGTGQTSAELEV 142

QRRHSLVSFVVRIVPSPDWFVGVDSLDLCDGDRWREQAALDLYPYDAGTDSGFTFSSPNF 202 143 ò g

ò g

263 NEIVDSASVPETPLDCEVSLWSSWGLCGGHCGRLGTKSRTRYVRVQPA--NNGSPCP 317

181 ŏ

Search completed: December 10, 2001, 19:46:03 Job time: 22032 sec

ð

```
GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
```

OM protein - protein search, using sw model

December 10, 2001, 19:17:38; Search time 16.91 Seconds Run on:

(without alignments) 1491.057 Million cell updates/sec

Perfect score: Sequence:

US-09-170-042A-2 1756 1 MENPSPAAALGKALCALLLA......NGSPCPELEEEBAECVPDNCV 331

BLOSUM62 Gapop 10.0 , Gapext 0.5 Scoring table:

219241 segs, 76174552 residues Searched:

al number of hits satisfying chosen parameters:

219241

Minimum DB seq length: 0 Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

PIR_68:* Database :

pir1:* pir2:* pir3:* pir4:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

		đ			SUMMARIES	
Result No.	Score	Query Match	& Query Match Length	DB	ID	Description
	462.5	26.3	807	7	A38152	F-spondin - rat
7	448.5	25.5	803	7	A47723	pI
e	406	23.1	805	~	T34212	hypothetical prote
4	127.5	7.3	741	7	I48694	probable transcrip
2	117	6.7	772	7	A55004	transcription fact
9	108	6.2	123	7	S49108	TRAP-C2 protein -
7	108	6.2	742	7	A49672	transcription fact
8	107	•	808	7	T10171	phospholipase D (E
6	104.5		440	7	T24232	hypothetical prote
10	104	5.9	1251	7	A57293	latent transformin
11	102		483	-	VCBP13	minor coat protein
12	100.5	5.7	810	7	D96566	hypothetical prote
13	100.5	5.7	2957	7	T33152	
14	99.5	5.7	424	7	C70651	
	99.5	5.7	590	7	146687	O
16	99.5	٠.	724	7	A48569	antigen Em100 - Ei
17	99.5	5.7	812	7	T03659	phospholipase D (E
18		5.6	808	7	T04092	phospholipase D (E
19	46	5.5	534	7	T41081	hypothetical prote
20	97		1360	7	T33922	hypothetical prote
21	97	5.5	1584	7	T00026	brain-specific and
22	96.5	•	598	7	A57249	beta-galactosidase
23	96.5	5.5	712	7	A45638	immunodominant mic
24	96.5	5.5	812		T03402	probable phospholi
25	96	5.5	591	-	C8HUB	complement C8 beta
26	95	5.4	1070		S75712	cellulase (EC 3.2.
27		5.4	809	7	T11695	phospholipase D (E
28	66	5.3	c	7	JQ1917	polyprotein - pars
29	92.5	5.3	912	7	A54423	brevican precursor

MSB2 protein - yea carboxymethylcellu	hypothetical prote peptide synthetase transposase-like p	probable retroelem proline rich prote	hypothetical prote anglodenesis inhib	hypothetical prote fibronectin - bovi	unc-5 protein - Ca unc-5 protein, lon	hypothetical prote period protein hom	hypothetical prote
\$25370 JC1201	T01437 T14165 T00208	G84542 T41015	S76424 T18856	T43169 FNBO	T32541 B44294	B86831 T09493	A70525
20	~ ~ ~	0 0	77	7	7 -	0 0	7
1306	1007 4976 777	1333	584 1444	1666 2265	919	668	620
5.5	25.5	5.2	5.1	5.1	5.1	5.1	5.0
92	91 90 5	90.5 90	06	06	89.5 89.5	ტ დ	88
30 31	3.22 3.32 3.42	32	37	39 40	4142	43	45

ALIGNMENTS

```
F-spondin - rat
C.Species: Rattus norvegicus (Norway rat)
C.Species: Rattus
A.Baldassare, M.; Jessell, T.M.
C.S. R. Baldassare, M.; Jessell, T.M.
C.S. R. Baldassare, M.; Jessell, T.M.
A.Accession: A38152
A.Accession: A38152
A.Accession: A38152
A.Status: preliminary
A.Macinia preliminary
A.Macinia preliminary
A.Macinia preliminary
A.Macinia preliminary
A.Macinia preliminary
A.Macinia preferences: GB-M88469; NID: 9204176; PIDN: AA41174.1; PID: 9204177
A.Experimental source: embryo floor plate
A.Note: sequence extracted from NCB1 backbone (NCBIN: 9087)
C.Superfamily: F-spondin; thrombospondin type 1 repeat homology <THRA>
F: 550-555/Domain: thrombospondin type 1 repeat homology <THRA>
F: 557-611/Domain: thrombospondin type 1 repeat homology <THRA>
F: 613-666/Domain: thrombospondin type 1 repeat homology <THRA>
F: 557-611/Domain: thrombospondin type 1 repeat homology <THRA>
F: 677-721/Domain: thrombospondin type 1 repeat homology <THRA>
F: 677-721/Domain: thrombospondin t
```

	12;
	Gaps
807;	s 37;
Length	Indel
DB 2;	137;
ore 462.5;	Best Local Similarity 34.2%; Pred. No. 2.9e-29; Matches 116; Conservative 49; Mismatches 137;
Sc :	, Pr 49;
26.3%	34.2% ative
	nilarity Conserv
tch	al Sil 116;
Query Ma	Best Loc Matches

12;										
sdı	89	230	127	290	178	344	238	402	291	456
37; Gaps	PAQ	ANH	SAP	OWP	WRE	. MVQ	IAR	VAR	990°	CSS
37;	PLFRE	PRF	VHAVE	i KAK	DGD-F	TKECC	KALPE	GSITC	SSWGI	SPWS
Indels	3 ALGKALCALLLATLGAAGQPLGGESICSARALAKYSITFTGKWSQTAFPKQYPLFRPPAQ 68	176 SLTKKLCEQDPTLDGVTDRPILDCCACGTAKYRLTFYGNWSEKTHPKDYPRRANH 230	69 WSSLLGAAHSSDYSWWRKNQYVSNGLRDFAERGEAWALMKEI-EAAGEALQSVHAVFSAP 127	231 WSAIIGGSHSKNYVLWEYGGYASEGVKQVAELGSPVKMEEEIRQQSDEVLTVIKAKAQWP 290	AVPSGTGQTSAELEVQRRHSLVSFVVRIVPSPDWFVGVDSLDLCDGD-RWRE 178	SWQPVNVRAAPSAEFSVDRTRHLMSFLTMMGPSPDWNVGLSAEDLCTKECGWVQ 344	179 QAALDLYPYDAGTDSGFTFSSPNFATIPQDTVTEITSSSPSHPANSFYYPRLKALPPIAR 238	345 KVVQDLIPWDAGTDSGVTYESPNKPTIPQEKIRPLTSLDHPQSPFYDPEGGSITQVAR 402	VTLVRL-RQSPRAFIPPAPVLPSRDNEIVDSASVPETPLDCEVSLMSSWGLCGG 291	403 VVIERIARKGEQCNIVPDNVDDIVADLAPEEKDEDDIPETCIYSNWSPWSACSS 456
	VSQT	SEK	-EAA(SOOS	VGVI	VGL:	ANS	OSPI	PLD	PET(
137;	TGK	YGN	KEI.	EEI	SPDWI	SPDW	SPSH	DHI		DEDDI
2.9e. hes	YSITI	YRLTI	AWALI	PVKMI	RIVP	MMGP:	ITSS	LTSI	PE	PEEKI
No. matc	ALAK	GTAK	ERGE	ELGS	SFVV	SFLT	TVTE	KIRP	SASV	LA
ed. Mis	CSAR	CCAC	RDFA	KQVA	HSLV	RHLM	IPOD	IPOE	EIVD	IVAD
49;	GESI	JT	SNGI	SEGV	SVORE	SVDRT	NFAT	NKPI	SRDN	D
4.28 ve	GOPLC	DRPI	KNOY	YGGY	SAELI	SAEF	TFSS	TYES	APVLI	DNV-
. 3 vati	LGAA	DGVT	SMWR	VLWE	TGQT		DSGF	DSGV	FIPP	NIVP
ırity onser	LLLAT	DPTL	ISSDY	ISKNY	AVPSG	de/	DAGT	NDAGT	SPRA	CGEOC
imila CC	ALCAI	(LCE	GAAL		1	/NVR	CYPY)LIP	RL-RC	RIAR
al Si 116;	ALGKALCA	SLTK	ASSLI	WSAI	1	SWOP	DAALI	KVVQI	VTLV	VVIE
Best Local Similarity 34.2%; Pred. No. 2.9e-29; Matches 116; Conservative 49; Mismatches 137;	9	176	1 69	231 1	. 38	291	179 (345	239 1	403
Best	`~	0	٠.	o.	5	0	~		5 -	c
	ζ	do	27	. A	ÓΥ	qq	Qy	qq	Οÿ	qq

292 HCGRLGTKSRTRYVRVQPANNGSPCPELEEEAECVPDNC 330

:: <u>::</u>

.. ----

셤

9

```
Probable transcription factor NFE2L1 - mouse
NiAlternate names: NFE2-related factor 1
C;Species: Mus musculus (house mouse)
C;Species: Mus musculus (house mouse)
C;Date: 15-Mar-1996 #sequence_revision 15-Mar-1996 #text_change 05-Nov-1999
C;Accession: 148694; S44137
R;McKis, 7; Johnstone, K; Mattei, M.G.; Scambler, P.
R;McKis, 7; Johnstone, K; Mattei, M.G.; Scambler, P.
A;File: Cloning and mapping of murine Nfe2l1.
A;Feference number: A56006; MUID:95278942
                                                                                                                                                                                                                                                                                                  296 FGPSPDMCVGLSSVNLCLPDCTWAEERTFELQPFDAGTDSGPTYMSPNEPTEPREPIHMI 355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 356 TTK--LNPLSPFYNSKSDTIPTLAKVILRRKNVTSSECKSDDILKAEAHNITNTSEDEEY 413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -----PSRDNEI 265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                414 KDRRECMMTQWEPWSLCSATCGKGIRIRSRVYVFPIKAQVFHCHRQTTEKQFCNAKINEC 473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Cross-references: EMBL:X78709; NID:g473089; PIDN:CAA55362.1; PID:g473090 C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       190 EVFDYSHRQKEQDVDKELQDGREREDTWSGEGAEALARDLIVDGETGESFPAQFPADVSS 249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          : | | :::| | ::|
EVNTSASEILYNAP----PGDPLSSNYSLAPNTPINONVSLHOASLGGCSODFSLFSPE 352
                                                                                                                                                           | | :|:| :||| || ::|:
177 CCACDIAQYDLEFTGIWSKNTHPKDYPTLEHLTHFTDMLGSSHSSNYSLWTIGGISTDGM 236
                                                                                                                                                                                                                                                                                                                                                                                              155 IVPSPDWFVGVDSLDLCDGD-RWREQAALDLYPYDAGTDSGFTFSSPNFATIPQDTVTEI 213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VDSASVPETPLDCEVSLWSSWGLCGGHCGRLGTKSRTRYVRVQPANNGSPCP-ELEEEAE 324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 78 S-SDYSMWRKNQYVSNGLRDFAERGEAW-----ALMKEIEAAGEALQSVHAVFSA--PA 128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -----SFYYPR 229
                                                                                                                                                                                                                                                    95 RDFAERGEAWALMKEIEAAGEALQSVHAVFSAPAVPSGTGQTSAELEVQRRHSLVSFVVR 154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VPSGTGQTSAELEVQRRHSLVSFVVRIVPSPDWFVGVDSLDLCDGDRWRE-QAALDLYPY 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                250 IPEAVPSESESPALQ--NSLLSPLLTGTESP-----FDL--EQQWQDLMSIMEMQAM 297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                 CSARALAKYSITFTCKWSQTAFPKQYPLFRPPAQWSSLLGAAHSSDYSMWRKNQYVSNGL 94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          19 LATLGAAGQPLGGESICSARALAKYSITFTG-KWSQTAFPKQYPLFRPPAQWSSLLGAAH 77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 741;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             C;Superfamily: fos/jun DNA-binding domain homology F;617-558/Domain: fos/jun DNA-binding domain homology <PJD>
              9.9e-25;
thes 131;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      45; Mismatches 119;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DAGTD-SGFTFSSPNFATIPQDTVTEITSSSPSHPAN----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   7.3%; Score 127.5; DB
22.4%; Pred. No. 0.021;
28.2%; Preu. www.
+ive 53; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              214 TSSSPSHPANSFYYPRLKALPPIARVTL-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       22.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      79; Conservative
                                                 103; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity
              Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-741 <RES>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             529 CVGEN 533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Accession: I48694
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CVPDN 329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Gene: NRF1
                                                                                                                    35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   298
                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                129
              Best
                                                                                                                    δ
                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                       ρp
                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ΩŽ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ŏλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          óλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                              in frog embryos injected with
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Gene: CESP:FI0E7.4
A;Introns: 9/1; 34/3; 57/1; 90/3; 128/3; 162/1; 205/1; 285/2; 417/1; 475/1; 606/1; 745/1
                                                                                                                                                               F.:spondin precursor - African clawed iroy
C; Species: Xenopus laevis (African clawed frog)
C; Species: Yenopus laevis (African clawed frog)
C; Species: Youn-1994 #sequence_revision 27-Jun-1994 #text_change 17-Nov-2000
C; Accession: A47723
R; Ruiz i Altaba, A.; Cox, C.; Jessell, T.M.; Klar, A.
Proc. Natl. Acad. Sci. U.S.A. 90, 8268-8272, 1993
A; Title: Ectopic neural expression of a floor plate marker in frog embryos injec
A; Reference number: A47723; MUID:93376785
A; Status: preliminary
A; Molecule type: mRNA
A; Residues: 1-803 <RUI>A; Residues: 1-803 <RUI
A; Residues: 1-803
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Species: Caenorhabditis elegans
Date: 29-Oct-1999 #sequence_revision 29-Oct-1999 #text_change 29-Oct-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 224 ANHWSAIIGGSHSGEYVLWEYGQ-ASDGVKQVAELGSPVKMEEEIRQKGDEVLTVIKAKA 282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             125 SAPAVP--SGTGQTSAELEVQRRHSLVSFVVRIVPSPDWFVGVDSLDLCDGD-RWREQAA 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    283 QWPANQPLNVRAAPSAEFSVDRSRHLMSFLAMMGPSPDWNVGLTSEDLCTKECGWVQKVV 342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                182 LDLYPYDAGTDSGFTFSSPNFATIPQDTVTEITS-SSPSHPANSFYYPRLKALPPIARVT 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          66 PAQWSSLLGAAHSSDYSMWRKNQYVSNGLRDFAERGEAWALMKEIEAAG-EALQSVHAVF 124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9 ALGKALCALLLATLGAAGQPLGGESI --- CSARALAKYSITFTGKWSQTAFPKQYPLFRP 65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   241 LVRLRQSPRAFIPPAPVLPSRDNEIV----DSASVPETPLDCEVSLWSSWGLCGGHCGR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 803;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 2; Length 805;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       48; Mismatches 141; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Cross-references: EMBL:U41264; PIDN:AAA82427.1; CESP:F10E7.4
C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     hypothetical protein F10E7.4 - Caenorhabditis elegans C; Species: Caenorhabditis elegans C; Species: Caenorhabditis elegans C; Date: 29.0ct-1999 #sequence_revision 29-0ct-1999 #text_CC; Accession: T34212 R; Pauley, A. Submitted to the EMBL Data Library, November 1995 A; Description: The sequence of C. elegans cosmid F10E7. A; Reference number: 221489 A; Reference number: 21489 A; Recession: T34212 A; Molecule type: DNA A; Residues: 1-805 <PAUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    25.5%; Score 448.5; DB 2; 34.3%; Pred. No. 3.8e-28;
          STCEKGKRMRQRMLKAQ-LDLSVPCPDTQDFQPCMGPGC 494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    296 LGTKSRTRYVRVQPANNGSPCPELEEEAECVPDNC 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 406;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      23.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best Local Similarity 34.3
Matches 115; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
          457
```

ò 셤 ð Q ò a δ g ò g

q ó q

ò

```
C;Accession: A49672
R;Chan, J.Y.; Han, X.L.; Kan, Y.W.
R;Chan, J.Y.; Han, X.L.; Kan, Y.W.
A;Cc. Natl. Acad. Sci. U.S.A. 90, 11371-11375, 1993
A;Title: Cloning of Nrfl, an NF-E2-related transcription factor, by genetic selection
A;Reference number: A49672; MUID:94068605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   transcription factor Nrfl - human NyAlternate names: basic leutine-zipper transcription factor; NF-E2-related factor 1 NyAlternate names: basic leutine-zipper transcription factor; NF-E2-related factor 1 C.Species: Hono sapiens (man) C.Species: O7-Apr-1994 #sequence_revision 18-Nov-1994 #text_change 16-Dec-1998
                                                                                                                                   C;Accession: S49108
R;Spano, F.S.; Ranucci, L.R.; Catteruccia, F.C.; Saccheo, S.S.; Crisanti, A.C. submitted to the EMBL Data Library, January 1994
A;Description: Thrombospondin related protein in Cryptosporidium.
A;Reference number: S49108
                                             C;Species: Cryptosporidium parvum
C;Date: 01-Feb-1995 #sequence_revision 12-May-1995 #text_change 09-Sep-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             190 EVFDYSHROKEQDVEKELRDGGEQDTWAGEGAEALARNILVDGETGESFPAQFPADISSI 249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         250 TEAVPSESEPPALQ-----NNLLSPLLTGTESP-----FDL--EQQWQDLMSIMEM 293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  185 YPYDAGTD-SGFTFSSPNFATIPQDTVTEITSSSPSHPANS------FY 226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  294 OAMEVNTSASEILYSAP----PGDPLSTNYSLAPNTPINQNVSLHQASLGGCSQDFLLF 348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  227 YPRLKALPPIARVTLVRLVSPRA-------FIPP-----APVLPSRD 262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             349 SPEVESLPVASSSTLLPLAPSNSTSLNSTFGSTNLTGLFFPPQLNGTANDTAGPELPDPL 408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Experimental source: erythroleukemia cell line K562 h/s. Experimental source: erythroleukemia cell line K562 cequence extracted from NCBI backbone (NCBIN:140521, NCBIP:140522) C; Superfamily: fos/jun DNA-binding domain homology F; 618-659/Pomain: fos/jun DNA-binding domain homology <FJD>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        78 S-SDYSMWRKNOYVSNGLRDFAER----GE-AWALMKEIEAAGEALQSVHAVFSA---- 126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       127 -PAVPSGTGQTSAELEVQRRHSLVSFVVRIVPSPDWFVGVDSLDLCDGDRWRE-QAALDL 184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            19 LATLGAAGQPLGGESICSARALAKYSITFTG-KWSQTAFPKQYPLFRPPAQWSSLLGAAH 77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               275 PLDCEVSLWSSWGLCGGHCGRLGTKSRTRYVRVQPAN-NGSPCPELEEEAECVPDNC 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6.2%; Score 108; DB 2; Length 742;
23.2%; Pred. No. 0.78;
tive 38; Mismatches 103; Indels 100;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 108; DB 2; Length 123;
Pred. No. 0.089;
6; Mismatches 26; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              C;Superfamily: thrombospondin type 1 repeat homology F;6-61/Domain: thrombospondin type 1 repeat homology <THR1>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Residues: 1-123 <SPA>
A;Cross-references: EMBL:X77586; NID:9509278; PID:9509279
TRAP-C2 protein - Cryptosporidium parvum (fragment)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Best Local Similarity 23.29
Matches 73; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity 40.49
Matches 23; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   263 NEIVDSASVPETPL 276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Residues: 1-742 <CHA>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Accession: A49672
A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Molecule type: mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                         A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Molecule type: DNA
                                                                                                                                                                                                                                                                                                                                                                                      A; Accession: S49108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ōλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Op
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ^{2}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ŏ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               C;Species: Homo sapiens (man)
C;Species: Homo sapiens (man)
C;Date: 11-Nov-1994 #sequence_revision 11-Nov-1994 #text_change 05-Nov-1999
C;Date: 11-Nov-1994 #sequence_revision 11-Nov-1999
C;Date: 11-Nov-1994
C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A Molecule type: mRNA
A; Residues: 1-772 <LUN>
A; Residues: 1-772 <LUN>
A; Cross-references: GBX73366; NID:9541677; PIDN:CAA54555.1; PID:9541678
B; Craterina, J.J.; Donze, D.; Sun, C.W.; Ciavatta, D.J.; Townes, T.M.
Nucleic Acids Res. 22, 2383-2391, 1994
A; Title: Cloning and functional characterization of LCR-F1: a b21P transcription factor
A; Reference number: $48097; MUID:94310069
A; Accession: $48097
A; Stafus: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              132 GTGQTSAELEVQRR------WFVGV 165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         166 DS-LDLCDGDRWRE-QAALDLYPYDAGTD-SGFTFSSPNFATIPQDTVTEITSSSPSHPA 222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               358 NONVSCHQASLGGCSQDFLLFSPEVESLPVASSSTLLPLAPSNSTSLNSTFGSTNLTGLF 417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              78 S-SDYSMWRKNQYVSNGLRDFAER----GE-AWALMKEIEAAGEALQSVHAVFSAPAVPS 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         190 EVFDYSHROKEODVEKELRDGGEQDTWAGEGAEALARNLLVDGETGESFPA----QVPS 244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    245 GEDOTALSLEECLRLLEATCPFGENAEFPADISSITEAVPSESEPPALONNLLSPLLTGT 304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    305 ESPFDL--EQOWQDLMSIMEMQAMEVNTSASEILYSAP-----PGDPLSTNYSLAPNTPI 357
          -- 275
                                                                                                353 VESLPVASSSTLLPLVPSNSTSLNSTFGSTNLAGPFFPSQLNGTANDTSGPELPDPLGGL 412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ouery Match 6.7%; Score 117; DB 2; Length 772;
Best Local Similarity 23.3%; Pred. No. 0.16;
Matches 78; Conservative 35; Mismatches 110; Indels 112; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   19 LATLGAAGQPLGGESICSARALAKYSITFTG-KWSQTAFPKQYPLFRPPAQWSSLLGAAH 77
          230 LKALPPIARVTLVRLRQSPRAFIP-----PAPVLPSRDNEIVDSASVPETP--
                                                                                                                                                                                                                                                                                           276 ----LDCEVSLWSSWGLCGGHCGRLGTKSRTRYVRVQPANNGSPCPELEEE 322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A:Map position: 17q22-17q22
C;Superfamily: fos/jun DNA-binding domain homology
C;Reywords: DNA binding; leucine zipper: transcription factor
F;648-689/Domain: fos/jun DNA-binding domain homology <FJD>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   153 LEDLGAVAPPVSGD-----LTKEDIDLIDILWRQDID--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            11 : | 1 : | | 418 FPPQLNGTANDTAGPELPDPLGGLEDEAMLDEISL 452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               252 IPP-----APVLPSRDNEIVDSASVPETPL 276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Cross-references: GDB:293921; OMIM:600115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             transcription factor TFC11 - human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           N; Alternate names: LCR-F1 protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Molecule type: mRNA
A; Residues: 326-772 <CAT>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Gene: GDB: TCF11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         223 NS---
```

:Genetics:

g

ŏ

qq ò a Óγ a

ò

```
90 VSNGLRDFAERGEAWALMKEIEAA----
         submitted to the EMBL Data
A;Reference number: Z19860
A;Accession: T24232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Molecule type: mRNA
A; Residues: 1-1251 <YIN>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity
Matches 76; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Accession: A57293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Accession: A60487
                                                                                                                                                                                                                                                                                     A; Gene: CESP:R17.3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Gene: Ltbp-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A Accession: A54850
A;Status: preliminary
A;Molecule type: mRNA
A;Molecule type: mRNA
A;Molecule type: mRNA
A;Residues: 1-101, '103-267,'L',269-447,'HLLLC',453-456,'LRHGMSSCLDPLMVELHLVSLRHLKMRQR
A;Crosš-references: GB:L33686
A;Note: the authors translated the codon AAG for residue 535 as Leu
A;Introns: 31/3; 665/1
C;Keywords: phosphoric diester hydrolase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Molecule type: mRNA
A; Residues: 1-267, L', 269-808 < WANN>
A; Residues: 1-267, L', 269-808 < WANN>
A; Cross-references: EMBL:13366, NID:g1438074; PID:g1438075
A; Experimental source: strain Hale; tissue_type endosperm
B; Wang, X.; Xu, L.; Zheng, L.
B; Biol. Chem. 269, 20312-20317, 1994
A; Title: Cloning and expression of phosphatidylcholine-hydrolyzing phospholipase D from A; Reference number: A54850; MUID:94327597
                                                                                                                                                                             phospholipase D (EC 3.1.4.4) - castor bean NAALernate names: choline phosphatase; lecithinase D; lipophosphodiesterase II C; Species: Ricinus communis (castor bean) C; Date: 16-Jul-1999 #sequence_revision 16-Jul-1999 #text_change 13-Aug-1999 C; Dates Sion: T10171; T10118; A54850 R; Xu, L.; Zheng, L.; Couphlan, S.J.; Wang, X. Plant, Mol. Biol. 32, 767-771, 1996
                                                                                                                                                                                                                                                                                                                                                                                                         ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             14;
                                                                                                                                                                                                                                                                                                                                                                                          A;Title: Structure and analysis of phospholipase D gene from Ricinus communis A;Reference number: 216972; WUID:97134969
A;Accession: T10171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     124232
hypothetical protein R17.3 - Caenorhabditis elegans
C;Species: Caenorhabditis elegans
C;Date: 15-Oct.1999 #sequence_revision 15-Oct.1999 #text_change 21-Jan-2000
C;Accession: T24232
R;Barlow, K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             120 VHAVFSAPAVPSGTGQTSAELEVQ---RRHSLVSFVVRIVPSPD------WFVGVDSLD 169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              170 LCDGDRWREQAALDLYPYDAGTDSGF-----TFSSPNFATIPQDTVTEITSSSPSH 220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       265 I-----VDSASV---PETPLDCEVSLWSSWGLCGGHCGRLGTKSRTRYVR-VQPANN 312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             : | : : : | | : | : | | 459 AWNVQLFRSIDGGAAFGFPETPEDAPEA----GLVSGKDNIIDRSIQDAYIHAIRRAKN 513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     303 VHCVL-CPRNPDDGGSFVQDLQISTMFTHHQKIVVVDSAMPNGDSQRRRIVSFVG--GLD 359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          360 LCDG-----ASIEKGGPRE 401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               402 PWHDI-HSRLEG--PIAWDVLFNFEQRWRKQGGKDLLIQLRELEDVIIPPSPVMYPDDFE 458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ----RVTLVRLRQSPRAFIPPAPVLPSRDNE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 808;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ouery Match 6.1%; Score 107; DB 2; Length 808
Best Local Similarity 24.6%; Pred. No. 1;
Matches 59; Conservative 24; Mismatches 81; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A:Molecule type: DNA
A:Residues: 1-808 <XUL>.
A:Cross-references: EMBL:U72693; NID:g169844
A:Cross-references: EMBL:U72693; LID:g169844
(Perimental source: cultivar Hale; tissue_type leaf
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Multted to the EMBL Data Library, July 1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                :Keywords: phosphoric diester hydrolase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Reference number: 216957
A;Accession: T10118
A;Status: translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A:Status: translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      221 PANSFYYPRLKALPPIA-----
409 GGLLDEAMLDEISL 422
                         셤
```

a ò g à 셤 ò g Ų

```
latent transforming growth factor beta-binding protein 3 precursor - mouse N.Alternate names: mitosis-inhibitory peptide (5.5pecies: Mus musculus (house mouse) (5.5pecies: Mus musculus (house mouse) (5.5pate: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 11-Jan-2000 (5.Accession: A57293; A60487 (5.2pate: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 11-Jan-2000 (5.Accession: A57293; A60487 (6.2pate: 0.2pate: 0.2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  C;Superfamily: unassigned EGF-related proteins; EGF homology C;Keywords: liver; pyroglutamic acid F;338-373/Domain: EGF homology <EGF> F;338-373/Domain: EGF homology <EGF> F;65/Modified site: pyrrolidone carboxylic acid (Gln) (in mature form) #status experi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Molecule type: protein
A;Residues: 65-69 <REI>
C;Comment: The molecular source of this pentapeptide has not been shown but it corres
C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Cross-references: GB:L40459
R;Reichelt, K.L.; Paulsen, J.E.; Elgjo, K.
Virchows Arch. B Cell Pathol. 59, 137-142, 1990
A;Title: Isolation of a growth and mitosis inhibitory peptide from mouse liver.
A;Reference number: A60487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 18;
                                                                                                                                                                                                                                                                       A;Residues: 1-440 <WIL>
A;Cross-references: EMBL:292809; PIDN:CAB07269.1; GSPDB:GN00021; CESP:R17.3
A;Experimental source: clone R17
C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      180 YSLLSKEMPLKVTSTPLLYBENRVQPANNLYYLES-SISECYCDEHCVTLGDCCSDYTFV 238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PQDTVT-EITSSSPSHPANSFYYPRLKAL------249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            100 GGO--CSSRNQCLCPPDFTGRFCQV------PAAGT---GAGTGSSGPGWPDRAM 143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ----GEALQSVHAVFSAPAVPSGTGQTSAEL 140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              30 GGESICSARALAKYSITFTGKWSQTAFPKQYPLFRPPAQWSSLLGAAHSSDYSMWRKNQY 89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       274 -TPLDCEVSLWSSWGLC---GGHCGRLGTKSRTRYVRVQPANNGSPCPELEEEAEC 325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        69;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A.Map position: 3
A.Introns: 36/3; 89/3; 179/2; 241/1; 306/1; 346/2
C.Superfamily: Caenorhabditis elegans hypothetical protein R17.3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 1251;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     100; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             43;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 2;
                                                                                                                                                        A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ----AFIP----PAPVL-----PSRDNEIVDSASVPE-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6.0%; Score 104.5; I 25.0%; Pred. No. 0.8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       20; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5.9%; Score 104; DB ilarity 24.3%; Pred. No. 3.1; Conservative 23; Mismatches
Library, March 1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             44; Conservative
```

```
A; Authors: Hunter, J.L.; Jenkins, J.; Johnson-Hopson, C.; Khan, S.; Khaykin, E.; Kim, C.A.; Li, J.H.; Li, Y.; Lin, X.; Liu, S.X.; Liu, Z.A.; Luros, J.S.; Maiti, R.; Marzia Rizzo, M.; Rooney, T.; Rowley, D.; Sakano, H.
A; Authors: Salzberg, S.L.; Schwartz, J.R.; Shinn, P.; Southwick, A.M.; Sun, H.; Tallo ker, M.; Wu, D.; Yu, G.; Fraser, C.M.; Venter, J.C.; Davis, R.W.
A; Title : Sequence and analysis of chromosome 1 of the plant Arabidopsis.
A; Accession: D96566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Cross-references: EMBL:AF067617; PIDN:AAC17559.1; GSPDB:GN00019; CESP:T04D1.4
A;Experimental source: strain Bristol N2; clone T04D1
                                                                                                                                                                                                                                                                                                                                          A; Cross-references: GB: AE005173; NID: 95903048; PIDN: AAD55607.1; GSPDB: GN00141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         C;Species: Caenorhabditis elegans
C;Date: 29-Oct-1999 #sequence_revision 29-Oct-1999 #text_change 29-Oct-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2407 AVALAQVAAAASASTSSADAQAVAQQQQVLEALLAMSMNPAALAALTGTSSSTGTSTPSA 2466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2467 PKKSKPAPQKESTSSATAAAAAASAQAAALAAAQQQQQQQQQQQAQQAAQQAQQAQSAKTQEELL 2526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    60 YPLFRPPAQWSSLLGA-----EAMS SDYSMWRKNQYVSNGLRDFAERG-----EAWA 105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 129 VPSGTGQTSAELEVQRRHSLVSFVVRIVPSPDWFVGVDSLDLCDGDRWREQAALDLYPYD 188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       189 AGTDSGF-----TFSSPNFATIPQDTVTEITSSSPSHPANSFYYPRLKALPPIA-- 237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  368 TPFHSLFRTLDTAHHDDFHQPNF-----TGAAITKGGPREPWHDIHC-RLEG--PIAWD 418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ----RVTLVRLRQSPRAFIPPAPVLPSRDNEI-----VD---SASVP 272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      💘 🖒 AAALGKALCALLLATLGAAGQPLGGES-----ICSARALAKYSITFTGKWSQTAFPKQ 59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Introns: 122/3; 293/3; 515/3; 1205/2; 1577/1; 2221/3; 2776/1; 2864/3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   79;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5.7%; Score 100.5; DB 2; Length 2957; 18.8%; Pred. No. 17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 2; Length 810;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   40; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        154; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   R:Davidson, S.; Wohldmann, P. submitted to the EMBL Data Library, May 1998
A:Description: The sequence of C. elegans cosmid T04Dl. A:Reference number: 221292
A:Accession: T33152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        hypothetical protein TO4D1.4 - Caenorhabditis elegans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5.7%; Score 100.5; D
25.7%; Pred. No. 3.5;
tive 17; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           55; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best Local Similarity 25.7%
Matches 47; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              63; Conservative
Nature 408, 816-820, 2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Residues: 1-2957 < DAV>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                           A:Status: preliminary
A:Molecule type: DNA
A:Residues: 1-810 <STO>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Gene: CESP:T04D1.4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             C; Accession: T33152
R; Davidson, S.; Wohl
                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Map position: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    273 ETP 275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              479 DSP 481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Map position:
                                                                                                                                                                                                                                                                                                                                                                                                          A; Gene: F6D8.21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            C:Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ζŽ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        OD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ċζ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               R;Theologis, A.; Ecker, J.R.; Palm, C.J.; Federspiel, N.A.; Kaul, S.; White, O.; Alonso, Chin, C.W.; Chung, M.K.; Conn, L.; Conway, A.B.; Conway, A.R.; Creasy, T.H.; Dewar, K.; ansen, N.F.; Hughes, B.; Huizar, L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ricuiten, R.G.M.; Putterman, D.G.; Schoenmakers, J.G.G.; Konings, R.N.H.; Day, L.A.
J. Virol. 56, 266-276, 1985
A;Title: Nucleotide sequence of the genome of Pf3, an Incp-1 plasmid-specific filamentou
A;Reference number: A94693; MUID:85293231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         C;Species: Arabidopsis thaliana (mouse-ear cress)
C;Date: 02-Mar-2001 #sequence_revision 02-Mar-2001 #text_change 31-Mar-2001
C;Accession: D96566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Note: host Pseudomonas aeruginosa
C;Date: 28-May-1986 #sequence_revision 28-May-1986 #text_change 23-Jul-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                161 WFVGVDSLDLCDGDRWREQAALDLYPYDAGTDSGFTFSSPNFATIPQDTVTEITSSSPSH 220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          59 QY-PLFRPPAQWSSLLG-----AAHSSDYSMWR------KNQYVSNGLRDFAERG- 101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  172 EYEPDPRSVPGWYSYNGNPVWVSAVEDVGFT-WRYWYFADVLMDGOGRPNYLVAYSDSGP 230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            102 -EAWALMKEIEAAGEALQSVHAVFSAPAVPSGTGQTSAELEVQRRHSLVSFVVRIVPSPD 160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NFATIPQDTVTEITSSSPSHPANSFYYPRLKALPPIARVTLVRLRQSP--RAFIPPAPVL 258
                                                                                                                                                                                                                                                              228 N-AEGPASSQHLLPHPKPQHPR-----PP----TQKPLGRCFQDTLPKQ 266
                                                                                                                                                                                                                                                                                                                        259 PSRDNEIVDSASVPETPL----DCEVSLWSSWGLCGGH-CGRLGTKSRTRYVRVQ-- 308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                112 ASGIGLGLAALLEAADWVFDEEGEIVKPLPGGGSPVLMPRPVILNEYTVTGSAGQWSISK 171
                                                                                                                                               ------GP 227
                                                                                                                                                                                                                                                                                                                                                                                  267 PCGSN------PLPGLTKQEDCCGSIGTAWGQSKCHKCPQL-----QYTGVQKP 309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  70; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         7 AAALGKALCALLLAT-----LGAAGQPL--GGESICSARALAKYSITFTGKWSQTAFPK 58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A;Cross-references: GB:M11912; NID:g215371; PIDN:AAA88379.1; PID:g215374 C;Comment: Bacteriophage Pf3 is a class II filamentous phage. C;Comment: The host is strain O harboring IncPl plasmids.
                                                                                        141 EVQRRHSLVSFVVRIVPSPDWFVGVDSLDLCDGDRWREQAALDLYPYDAGTDSGFTFSSP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5.8%; Score 102; DB 1; Length 483; 25.8%; Pred. No. 1.4; tive 24; Mismatches 84; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    hypothetical protein F6D8.21 [imported] - Arabidopsis thaliana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Gene: 483
C;Superfamily: class II filamentous phage minor coat protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   231 NEYWO ---- DVGGYSLDSL ----- PTEPEFVPLTDAELE----
                                                                                                                                                  199 EVQAPPPVVN--VRVHHPPEASVQVHRIE-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match 5.84
Best Local Similarity 25.84
Matches 62; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   minor coat protein - phage Pf3
C;Species: phage Pf3
                                                                                                                                                                                                                                                                                                                                                                                                                                               309 -PANN--GSPCPE 318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      310 VPVRGEVGADCPQ 322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     C; Keywords: capsid protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Residues: 1-483 <LUI>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          C; Accession: A04232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Accession: A04232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Molecule type:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ULT 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      q
                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                 g
                                                                                        δ
                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
```

```
85 RHAYLLRPSQFNGEPCNFSDKEVE 108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               QΫ́
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .
g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ricole, S.T.; Brosch, R.; Parkhill, J.; Garnier, T.; Churcher, C.; Harris, D.; Gordon, S.; Connor, R.; Davies, R.; Devlin, K.; Feltwell, T.; Gentles, S.; Hamlin, N.; Holroyd, S.; Maturean, M.A.; Rogers, J.; Rutter, S.; Seeger, K.; Skelton, S.; Squares, S.; Natures 393, 537-544, 1998

A.Authors: Sqares, R.; Sulston, J.E.; Taylor, K.; Whitehead, S.; Barrell, B.G.
A.Authors: Sqares, R.; Sulston, J.E.; Taylor, K.; Whitehead, S.; Barrell, B.G.
A.Accession: C70651

A.Scerence number: A70500; MUD: 98295987

A.Scerence specification of shown

A.Scerence Strain and A70500; MUD: 93261691; PIDN: CAB06249.1; PID: e290921; A70600; A706000; A7060000; A706000; A706000; A706000; A706000; A706000; A7060000; A70600000; A7060000; A7060000; A7060000; A7060000; A7060000; A70600000; A70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     22;
                                                                         2527 ILRLLELAGVGMQELAKLNTMSKDARVPMIHKQTRESLPVSKRPPIRDLTVFVMSNPEWS 2586
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ecies: Mycobacterium tubercilosis
te: 17-Jul-1998 #sequence_revision 17-Jul-1998 #text_change 22-Oct-1999
ccession: C70651
                                                                                                                                                                                                                                                                                                                                                                                                2632 PKVEKSSATPSAPETPSASATCNIKIGESLQ-FDDMISVFNRKTGELLAASKWPKA---T 2687
                                                                                                                                                                                                                                                 2587 IDIPLFNEMSGN------GTGSGAAPSSKAASSRPTPAATPLAVATPKPST 2631
106 LMKEIEAAGEALQ---SVHAVFSAPAVPSGTGQTSAELEVQRRHSLVSFVVRIVPSPDWF 162
                                                                                                                                                               163 VGVDSLDLCDGDRWREQAALDLYPYDAGTDSGFTFSSPNFATIPQDTVT--EITSSSPSH 220
                                                                                                                                                                                                                                                                                                                                        P.-ANSFYYPRLKALPPIARVTLVRLRQSPRAFIPPAPVLPSRDNEIVDSASVPETPLDC 278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    75 -----SPARGSRHLGFAKALVYEMPHTLAALDCGALSEWRATLIVRESACLDVA 123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ER----GEAWALMKEIEAAGEALQSVHAVFSAPAV-----PSGTGQTSAELEVQRRHSLV 149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    124 DRRALDAELCGDPGDLEGMGDA----RVVAAARAIAYRLDPQAVVDRAANAENDR---- 174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ----DLCDGDRWREQAALD-LYPYDAG 190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     191 TDSGFTFSSPNFATIPQDTVTEITSS-----SPSHPANSFYY---PRLKALPPIA--- 237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ----RVTLVRLRQSP-----RAFIPP---APVLPSRDNEIVDSASVPETPLDCEV 280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DORSRATLRRLYAHPQAGALVSMESRARLFPRGLAAFIELRDQRC-----RTPY-CDA 333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -- WRKNOYV-SNGLRDFA 98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 MENPSPAAALGKALCALLL----ATLGAAGQPLG--GESICSARALAKYSITFTGKWSQ 53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   woothetical protein Rv3074 - Mycobacterium tuberculosis (strain H37RV)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5.7%; Score 99.5; DB 2; Length 424;
23.4%; Pred. No. 1.9;
tive 29; Mismatches 136; Indels 139;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SL-----WSSWGLCGGHCGRLGTKSRTRYVRVQP 309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   334 PIRHRDHAHPWADGGPTSAHNG-LGTCERCNYAKQAP 369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2688 ELSAWLDANPDYNVHANSALFAHLSLGGAHSDRIG 2722
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               279 EVSLW------SSWGLCGGHCGRLG 297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  54 TAFPKOYPLFRPPAQWSSLLGAAHSSDYSM-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              150 SFVVRIVPSPDWFVGVDSL------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    93; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Best Local Similarity
Matches 93; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              281
                                                                             a
                                                                                                                                                                    ð
                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                   ð
                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   q
```

```
A; Molecule type: mRNÅ
A; Residues: 1-590 <WHI>
A; Residues: 1-590 <WHI>
A; Casareferences: GBL126980; NID:g469062; PIDN:AAA31192.1; PID:g469063
A; Crosarreferences: GBL26980; MID:g469062; LDL receptor ligand-binding repeat homology
E; 63-117/Domain: thrombospondin type 1 repeat homology <THR>
E; 122-155/Domain: LDL receptor ligand-binding repeat homology <LDL>
E; 503-534/Domain: EGF homology <EGF>
                                                                                                                                               Riwhite, R.V.; Kaufman, K.M.; Letson, C.S.; Platteborze, P.L.; Sodetz, J.M. J. Immunol. 152, 2501-2508, 1994
A;Title: Characterization of rabbit complement component C8: Functional evidence for A;Reference number: 146686; MUID:94179833
A;Reference number: 146687
complement component C8 beta subunit - rabbit
C;Species: Oryctolagus cuniculus (domestic rabbit)
C;Date: 14-Feb-1997 #sequence_revision 14-Feb-1997 #text_change 20-Aug-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   13; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      246 QSPRAFIPPA---PVLPSRDNEIVDSASVPETPLDCEVSLWSSWGLCGGHCGRLGTKSRT 302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5.7%; Score 99.5; DB 2; Length 590; 33.3%; Pred. No. 2.9; tive 15; Mismatches 28; Indels 1
                                                                                                                                                                                                                                                                                                                                                 A; Status: preliminary; translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             303 RYV-RVQPAN-NGSPCPELEEEAE 324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best_Local Similarity
Matches 28; Conserv
                                                                                                                       C; Accession: 146687
```

9

Search completed: December 10, 2001, 20:03:09 Job time: 2731 sec

```
GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
```

OM protein - protein search, using sw model

December 10, 2001, 19:46:05; Search time 62.4 Seconds

(without alignments) 194.488 Million cell updates/sec

US-09-170-042A-2 Perfect score:

1 MENPSPAAALGKALCALLLA......NGSPCPELEEEAECVPDNCV 331 Sequence:

BLOSUM62 Scoring table: 100059 seqs, 36664827 residues Searched:

Gapop 10.0 , Gapext 0.5

al number of hits satisfying chosen parameters:

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

SwissProt_39:* Database : Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution. 'Pred. No.

SUMMARIES

302. 1302. 1306. 1301. 1341. 1255. 1255. 1257. 1257. 1257. 1257. 1257. 1367. 1		
	1306 2341 1255 11255 11267 11267 11267 11267 11268 112	227111000000000
	93.57 92.93.92 92.93.93 93.93 83.93 87.88 87.88 87.88 86.58	

CARBOHYD

O60241 homo sapien Q60519 mus musculu							P42222 saccharomyc	_
BAI2_HUMAN SM5B_MOUSE	EX5B_MYCTU RET_HUMAN	CLH1_HUMAN	CLH_RAT	PGCA_CANFA	UFO_MOUSE	GLPF_PSEAE	ERR1_YEAST	IF4G_HUMAN
			-		7	7	П	П
1572 1093	1094 1114	1675	1675	2333	888	279	437	1395
4.9	4.8 8.8	4.6	. 4	4.8	4.7	4.7	4.7	4.7
85.5	8 8 5 5	83.5	83.5	83.5	83	82.5	82.5	82.5
34 35	36 37	338	40	4.1	42	43	44	45

ALIGNMENTS

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bloinformatics and the EMBL outstation the European Bloinformatics Institute. There are no restrictions on its mose by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (see http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                               -i- FUNCTION: PROMOTES THE ATTACHMENT OF SPINAL CORD AND SENSORY NEURON CELLS AND THE OUTGROWTH OF NEURITES IN VITRO. MAY CONTRIBUTE TO THE GROWTH AND GUIDANCE OF AXONS IN BOTH THE SPINAL
                                                                                                                                   Eukaryota; Merazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
NCBL_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                                                          SUBCELLULAR LOCATION: SECRETED.
--- TISSUE SPECIFICITY: EXPRESSED AT HIGH LEVELS IN THE FLOOR PLATE.
--- SIMILARITY: CONTAINS 6 TSP TYPE-1 DOMAINS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         F-SPONDIN.
F-SPONDIN.
TSP TYPE-1 1.
TSP TYPE-1 2.
TSP TYPE-1 2.
TSP TYPE-1 5.
TSP TYPE-1 6.
TSP TYPE-1 6.
N-LINKED (GLCNAC. ..) (POTENTIAL).
N-LINKED (GLCNAC. ..) (POTENTIAL).
                                                                                                                                                                                                                  TISSUB-Embryonic floor plate;
MEDLINE-92208952; PubMed-155244;
Klar A., Baldassare M., Jessell T.M.;
Klar A., a gene expressed at high levels in the floor plate encodes a secreted protein that promotes neural cell adhesion and
                                                         01-JUN-1994 (Rel. 29, Created)
01-JUN-1994 (Rel. 29, Last sequence update)
20-AUG-2001 (Rel. 40, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Cell adhesion.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Repeat;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PIR; A38152; A38152.
InterPro; IPR002861; Reeler.
InterPro; IPR000884; TSP1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL; M88469; AAA41174.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pfam; PF02014; Reeler; 1.
Pfam; PF00090; tsp_1; 6.
SWART; SW00209; TSP1; 6.
PROSITE; PS50092; TSP1; 5.
Glycoprotein; Signal; Repeating Signal.
                             STANDARD;
                                                                                                                         Rattus norvegicus (Rat).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           494
554
610
665
720
807
214
                                                                                                                                                                                                                                                                                                                                                                             CORD AND THE PNS.
                                                                                                          F-SPONDIN PRECURSOR.
                                                                                                                                                                                                                                                                                                   neurite extension.";
Cell 69:95-110(1992)
                                                                                                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CARBOHYD
                               FSPO RAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NIVEGO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NUMMEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DOMAIN
Н
             FSPO_RAT
RESULT
```

```
DOMAIN
                                                                                                               DOMAIN
                                                                                                                         DOMAIN
                                                                                                                                    DOMAIN
                                                                                                                                                 DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 3
NFL1_MOUSE
   òγ
                                                                                                                                                                                                                                                                                                                                     .
Dp
                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                    .
Q
                                                                                                                                                                                                                                                                                                                                                                                                                                      pp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                Óγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                              12;
                                                                                                                                                 291 SWQPVNVRAAP-----SAEFSVDRTRHLMSFLTWMGPSPDWNVGLSAEDLCTKECGWVQ 344
                                                                                                                                                                                                                                                                                            176 SLTKKLCEQDPTLDGVTDRPI----LDCCACGTAKYRLTFYGNWSEKTHPKDYP--RRANH 230
                                                                                                                                                                                128 ------AVPSGTGQTSAELEVQRRHSLVSFVVRIVPSPDWFVGVDSLDLCDGD-RWRE 178
                                                                                                                                                                                                                              179 QAALDLYPYDAGTDSGFTFSSPNFATIPQDTVTEITSSSPSHPANSFYYPRLKALPPIAR 238
                                                                                                                                                                                                                                                     345 KVVQDLIPWDAGTDSGVTYESPNKPTIPQEKIRPLTSL--DHPQSPFYDPEGGSITQVAR 402
                                                                                                                                                                                                                                                                            239 VTLVRL-RQSPRAFIPPAPVLPSRDNEIVDSASVPE-----TPLDCEVSLWSSWGLCGG 291
                                                                                                                                 69 WSSLLGAAHSSDYSMWRKNQYVSNGLRDFAERGEAWALMKEI-EAAGEALQSVHAVFSAP 127
                                                              Gaps
                                                                                 9 ALGKALCALLLATLGAAGQPLGGESICSARALAKYSITFTGKWSQTAFPKQYPLFRPPAQ 68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -!- TISSUE SPECIFICITY: EXPRESSED AT HIGH LEVELS IN THE FLOOR PLATE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eukaryota; Metazoa; Chordata; Craníata; Vertebrata; Euteleostomi;
Amphibia; Batrachia; Anura; Mesobatrachia; Pipoidea; Pipidae;
                                                             37;
                                    Length 807;
                                                             Indels
 90773 MW; 309525F9EAFEA89A CRC64;
                                                            49; Mismatches 137;
                                     DB 1;
                                                                                                                                                                                                                                                                                                                           292 HCGRLGTKSRTRYVRVQPANNGSPCPELEEEAECVPDNC 330
                                                                                                                                                                                                                                                                                                                                           | : | | : | | : | | 457 STCEKGKRMRQRMLKAQ-LDLSVPCPDTQDFQPCMGPGC 494
                                    26.3%; Score 462.5; DB 34.2%; Pred. No. 4e-30;
                                                                                                                                                                                                                                                                                                                                                                                                                                 01-JUN-1994 (Rel. 29, Created)
01-JUN-1994 (Rel. 29, Last sequence update)
15-JUL-1999 (Rel. 38, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                              803 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Xenopus laevis (African clawed frog).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SUBCELLULAR LOCATION: SECRETED.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE=93376785; PubMed=8367492;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EMBL; L09123; AAA19105.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PIR; A47723; A47723.
InterPro; IPR002861; Reeler.
InterPro; IPR000884; TSP1.
                                 Query Match
Best Local Similarity 34.29
Matches 116; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                              STANDARD;
                                                                                                                                                                                                                                            Xenopus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CORD AND THE PNS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     F-SPONDIN PRECURSOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NCBI_TaxID=8355;
807
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TISSUE-Embryo;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Xenopodinae;
                                                                                                                                                                                                                                                                                                                                                                                                              FSPO_XENLA
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                        P35447
                                                                                                                                                                                                                                                                                                                                                                                      RESULT 2
FSPO_XENLA
S
                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                     g
                                                                                  ð
                                                                                                                                  ò
                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                            ö
```

```
12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           061985; 070234;
061985; 070234;
30-MAY-2000 (Rel. 39, Last sequence update)
30-MAY-2000 (Rel. 39, Last annotation update)
NUCLEAR FACTOR EXTHROID 2 RELATED FACTOR 1 (NF-E2 RELATED FACTOR 1)
(NFE2-RELATED FACTOR 1) (NUCLEAR FACTOR, ERYTHROID DERIVED 2, LIKE 1).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    283 QWPAWQPLNVRAAPSAEFSVDRSRHLMSFLAMMGPSPDWNVGLTSEDLCTKECGWVQKVV 342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                66 PAQWSSLLGAAHSSDYSMWRKNQYVSNGLRDFAERGEAWALMKEIEAAG-EALQSVHAVF 124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      125 SAPAVP--SGTGQTSAELEVQRRHSLVSFVVRIVPSPDWFVGVDSLDLCDGD-RWREQAA 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        399 IERIARKGE----OCNIIPDNVDDIVADLVTEEKDEDDTPETCIYSNWSPWSACSSATCD 454
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9 ALGKALCALLLATLGAAGQPLGGESI---CSARALAKYSITFTGKWSQTAFPKQYPLFRP 65
                                                                                                                                          TSP TYPE-1 1.
TSP TYPE-1 2.
TSP TYPE-1 2.
TSP TYPE-1 4.
TSP TYPE-1 5.
TSP TYPE-1 5.
TSP TYPE-1 5.
TSP TYPE-1 6.
TSP TYPE-1 6.
TSP TYPE-1 6.
TSP TYPE-1 6.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A. (LONG AND SHORT ISOFORMS).
MEDLINE-98248571; PubMed-9580677;
Prieschl E.E., Novotny V., Csonga R., Jaksche D., Elbe-Buerger A.,
Thumb W., Auer M., Stingl G., Baumruker T.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         182 LDLYPYDAGTDSGFTFSSPNFATIPQDTVTEITS-SSPSHPANSFYYPRLKALPPIARVT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               241 LVRLRQSPRAFIPPAPVLPSRDNEIV----DSASVPETPLDCEVSLWSSWGLCGGHCGR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                         Length
                                                                                                                                                                                                                                                                                                                                                                                                                                              48; Mismatches 141; Indels
                                                                                                                                                                                                                                                                                                               LINKED (GLCNAC. . .) (P. D3A54E329548AED9 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ь.
С
                                                                                                                                                                                                                                                                                                                                                                                                  25.5%; Score 448.5; DB 1; 34.3%; Pred. No. 5.4e-29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    McKie J., Johnstone K., Mattel M. G., Scambler "Cloning and mapping of murine Nfe211."; Genomics 25:716-719(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       296 LGTKSRTRYVRVQPANNGSPCPELEEEAECVPDNC 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   455 KGKRMRQRMLKAQ-LDLSVPCPDTQDFEPCMGPGC 488
                                                                                   Cell adhesion
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  741 AA
                                                                                                                               F-SPONDIN.
TSP TYPE-1
                                                                                                            POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TISSUE=Embryo;
MEDLINE=95278942; Pubmed=7759107;
                  Pfam; PF00090; tsp_1; 6.
SMART; SM00209; TSP1; 6.
PMSSTTE; PS50092; TSP1; 6.
Glycoprotein; Signal; Repeat;
                                                                                                                                                                                                                                                                                                                                      MW.
                                                                                                                                                                                                                                                                                                                                    90702
Pfam; PF02014; Reeler; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STANDARD;
                                                                                                                                                                           548
604
661
716
803
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mus musculus (Mouse)
                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity
Matches 115; Conserv
                                                                                                                                                                                                                                                                                                                                 803 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NCBI_TaxID=10090;
                                                                                                                                                      437
496
553
609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NFL1_MOUSE
                                                                                                                                                                                                                                                                                                                                 SEQUENCE
                                                                                                                                                                                                                                                                                        CARBOHYD
                                                                                                                                                                                                                                                                                                               CARBOHYD
                                                                                                                               CHAIN
DOMAIN
```

```
"A novel splice variant of the transcription factor Nrf1 interacts
"With the ThFalpha promoter and stimulates transcription.";
"Nath the ThFalpha promoter and stimulates transcription.";
"Nate of the SHOTT ISOFORM INTERACTS WITH THE EXTENDED KAPPA 3
SITE OF THE THE ALPHA PROMOTER AFTER FC GAMMA RIII STIMULATION AND PARTICIPATES IN THE INDUCTION OF THIS CYTOKINE. THE LONG ISOFORM
IS EITHER INACTIVE ON REPRESSES THE TRANSCRIPTIONAL ACTIVATION.

SEVERAL TRANSCRIPTION FACTORS.

-1- SUBMELLIAR LOCATION: NUCLERR (BY SIMILARITY).

-1- SUBCELLULAR LOCATION: NUCLERR (BY SIMILARITY).

-1- ALTERNATIVE PRODUCED BY ALTERNATIVE SPLICING.

-1- ALTERNATIVE PRODUCED BY ALTERNATIVE SPLICING.

-1- TISSUE SPECIFICITY: WIDELY EXPRESSED.

-1- TISSUE SPECIFICATY: OF THE BZIP FAMILY. CNC SUBFAMILY.

-1- SIMILARITY: BELONGS TO THE BZIP FAMILY. CNC SUBFAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      17;
                                                                                                                                                                                                                                                                                                                                                 This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way
                                                                                                                                                                                                                                                                                                                                                                                                                                   modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    153 LEDLGAVAPPVSGD-----LTTKEDIDLIDILWRQDID-------LGAGR 189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 78 S-SDYSMWRKNQYVSNGLRDFAERGEAW-----ALMKEIEAAGEALQSVHAVFSA--PA 128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 129 VPSGTGQTSAELEVQRRHSLVSFVVRIVPSPDWFVGVDSLDLCDGDRWRE-QAALDLYPY 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ---SFYYPR 229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NUCLEAR LOCALIZATION SIGNAL (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL; AF015881; AAC40108.1; -.
HSSP; P34707; ISRN.
MGD; MG199421; MF2211.
InterPro; IPR001871; bZIP.
Pfam; PF00170; bZIP; 1.
SMART; SM0038; BRLz; 1.
RNOSTIF; PS00036; BZIP_BASIC; 1.
BNOSTIF; PS00036; BZIP_BASIC; 1.
DNA-binding; Nuclear protein; Phosphorylation; Alternative splicing.
DOMAIN 125 259 ASP/GLU-RICH (ACIDIC).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            19 LATLGAAGOPLGGESICSARALAKYSITFTG-KWSQTAFPKQYPLFRPPAQWSSLLGAAH 77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         190 EVFDYSHRQKEQDVDKELQDGREREDTWSGEGAEALARDLLVDGETGESFPAGFPADVSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          298 EVNTSASEILYNAP----PGDPLSSNYSLAPNTPINQNVSLHQASLGGCSQDFSLFSPE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           230 LKALPPIARVTLVRLRQSPRAFIP-----PAPVLPSRDNEIVDSASVPETP----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        353 VESLPVASSSTLLPLVPSNSTSLNSTFGSTNLAGPFFPSQLNGTANDTSGPELPDPLGGL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 45; Mismatches 119; Indels 109;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       7.3%; Score 127.5; DB 1; Length 741; 22.4%; Pred. No. 0.0073;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ----LDCEVSLWSSWGLCGGHCGRLGTKSRTRYVRVQPANNGSPCPELEEE 322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LEUCINE-ZIPPER (BY SIMILARITY)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BASIC MOTIF (BY SIMILARITY)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MISSING (IN SHORT ISOFORM). MISSING (IN SHORT ISOFORM).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S -> T (IN REF. 2).
P -> L (IN REF. 2).
C01E89DD26E7CDEF CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ASP/GLU-RICH (ACIDIC).
ASP/GLU-RICH (ACIDIC).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      188 DAGTD-SGFTFSSPNFATIPQDTVTEITSSSPSHPAN-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     POLY-SER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          81545 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         22.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             est Local Similarity 22.49 tches 79; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL; X78709; CAA55362.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        741 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DNA_BIND
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VARSPLIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VARSPLIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
      à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (see http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        17;
                         NFLL_HUMAN
O14494, 201877;
15-JUL-1998 (Rel. 36, Last sequence update)
15-JUL-1998 (Rel. 36, Last sequence update)
15-JUL-1998 (Rel. 36, Last sequence update)
20-AUG-2001 (Rel. 40, Last annotation update)
NUCLEAR FACTOR ERYTHROID 2 RELATED FACTOR 1)
(NFE2-RELATED FACTOR 1) (NUCLEAR FACTOR, ERYTHROID DERIVED 2, LIKE 1)
(TRANSCRIPTION FACTOR 11) (TRANSCRIPTION FACTOR HB217) (TRANSCRIPTION NFE2LIOR CR.F.1) (LOCUS CONTROL REGION-FACTOR 1).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    190 EVFDYSHRQKEQDVEKELRDGGEQDTWAGEGAEALARNLLVDGETGESFPA----QVPS 244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               78 S-SDYSMWRKNQYVSNGLRDFAER----GE-AWALMKEIEAAGGALQSVHAVFSAPAVPS 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   153 LEDLGAVAPPVSGD-----LTKEDIDLIDILWRQDID-------LGAGR 189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE=94310069; Pubmed=8036168; Caterina J.J., Donze D., Sun C.W., Ciavatta D.J., Townes T.M.; Caterina J.J., Donze D., Sun C.W., Ciavatta D.J., Townes T.M.; "Cloning and functional characterization of LCR-F1: a bZIP transcription factor that activates erythroid-specific, human globin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  19 LATLGAAGQPLGGESICSARALAKYSITFTG-KWSQTAFPKQYPLFRPPAQWSSLLGAAH 77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Nucleic Acids Res. 22:2383-2391(1994).
-!- FUNCTION: ACTIVATES ERYTHROID-SPECIFIC, GLOBIN GENE EXPRESSION.
-!- SUBCELLULAR LOCATION: NUCLEAR (BY SIMILARITY).
-!- SIMILARITY: BELONGS TO THE BZIP FAMILY. CNC SUBFAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PROSITE; PS00036; BZIP_BASIC; 1.
Transcription regulation; Activator; DNA-binding; Nuclear protein.
DOMAIN 125 288 ASP/GLU-RICH (ACIDIC).
                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens (Human).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE-95095252; PubMed=8001966;
Luna L., Johnsen O., Skartlien A.H., Pedeutour F., Turc-Carel C.,
Prydz H., Kolstoe A.-B.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     "Molecular cloning of a putative novel human bZIP transcription
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 110; Indels 112;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 1; Length 772;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ASP/GLU-RICH (ACIDIC).
POLY-SER.
BASIC MOTHER.
LEUCINE-ZIPPER.
W. C868807C6046BEF5 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6.7%; Score 117; DB 1
23.3%; Pred. No. 0.055;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 35; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  factor on chromosome 17q22.";
Genomics 22:553-562(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          84703 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE OF 326-772 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL; X77366; CAA54555.1; -. EMBL; U08853; AAA20466.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             23.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   InterPro; IPR001871; bZIP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Best Local Similarity 23.3 Matches 78; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SMART; SM00338; BRLZ; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pfam; PF00170; bZIP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             496 5
659 6
682 7
772 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     HSSP; P34707; 1SKN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gene expression.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MIM; 163260;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DNA_BIND
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DOMAIN
NFL1_HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                    A PART A 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 00
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (see http://www.isb-sib.ch/announce/or send an email to licenseelab-sib.ch).
                                                                                     DS-LDLCDGDRWRE-QAALDLYPYDAGTD-SGFTFSSPNFATIPQDTVTEITSSSPSHPA 222
                                                                                                                 :| | | :| | :| | :| | | :| | 305 ESPFDL--EQQWQDLMSIMEMQAMEVNTSASEILYSAP-----PGDPLSTNYSLAPNTPI 357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ricinus communis (Castor bean).

Eukaryota, Viidiplantae, Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosidae;
eurosids I; Malpighiales; Euphorbiaceae; Ricinus.

NCBL_TaxID=3988;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE-97134969; PubMed-8980529; Xu L., Zheng L., Coughlan S.J., Wang X.; "Structure and analysis of phospholipase D gene from Ricinus communis
                                                                                                                                                                               -----FYYPRLKALPPIARVTLVRLRQSPRA-----F 251
                                                                                                                                                                                                                      358 NONVSLHQASLGGCSQDFLLFSPEVESLPVASSSTLLPLAPSNSTSLNSTFGSTNLTGLF 417
                                         245 GEDQTALSLEECLRLLEATCPFGENAEFPADISSITEAVPSESEPPALQNNLLSPLLTGT 304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Plant Mol. Biol. 32:767-771(1996).
--- FUNCTION: PLAYS AN IMPORTANT ROLE IN CELLULAR PATHWAYS INCLUDING SIGNAL TRANSDUCTION PATHWAYS.
--- CATALYTIC ACTIVITY: A PHOSPHATIDYLCHOLINE + H(2)0 = CHOLINE + A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -i- COFACTOR: CALCIUM (BY SIMILARITY).
-i- TISSUE SPECIFICITY: MOSTLY EXPRESSED IN VACUOLES, ENDOPLASMIC RETICULM, A FEW IN PLASTIDS AND PLASMA MEMBRANE. EXPRESSION IS HIGHER IN RADICLE THAN IN ENDOSPERM.
                                                                                                                                                                                                                                                                                                                                                                                                                   PID_RICCO STANDARD; PRT; 808 AA.
041142; P93507;
041142; P93507;
01.NOV-1997 (Rel. 35, Last sequence update)
15-DEC-1998 (Rel. 37, Last annotation update)
PHOSPHOLIPASE D PRECURSOR (EC 3.1.4.4) (PLD) (CHOLINE PHOSPHATASE)
(PHOSPHATIDYLCHOLINE HYDROLYZING PHOSPHOLIPASE D).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Wang X., Xu L., Zheng L.; "Cloning and expression of phosphatidylcholine-hydrolyzing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SIMILARITY: BELONGS TO THE PHOSPHOLIPASE D FAMILY.
GTGQTSAELEVQRR------HSLVSFVVRIVPSPD----
                                                                                                                                                                                                                                                                  252 IPP-----APVLPSRDNEIVDSASVPETPL 276
                                                                                                                                                                                                                                                                                                         418 FPPQLNGTANDTAGPELPDPLGGLLDEAMLDEISL 452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       phospholipase D from Ricinus communis L.";
J. Biol. Chem. 269:20312-20317(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
STRAIN-CV. HALE; TISSUE-Endosperm;
MEDLINE-94327597; PubMed-8051126;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL; L33686; AAB04095.1; -. EMBL; U72693; AAB37305.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       InterPro: IPR000008; C2.
InterPro: IPR001736; PLD.
Pfam; PF00614; PLDc; 2.
SMART; SM00239; C2; 1.
SMART; SM00155; PLDC; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PHOSPHATIDATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TISSUE-Leaf
132
                                                                                                                                                                                                                                                                                                                                                                                                   _RICCO
                                                                                                                                                                                                                                                                                                                                                                               RESULT
                                                                                     õ
                                                                                                                            g
                                                                                                                                                                             ò
                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                            g
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation-the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (see http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      14;
                                                                                                                                                                                                      14;
                                                                                                                                                                                                                                                                                                                                                                                                    402 PWHDI-HSRLEG--PIAMDVLFNFEQRWRKQGGKDLLIQLRELEDVIIPPSPVMYPDDFE 458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        "Nucleotide sequence of the genome of Pf3, an IncP-1 plasmid-specific filamentous bacteriophage of Pseudomonas aeruginosa."; J. Virol. 56:268-276(1985).
                                                                                                                                                                                                                                      120 VHAVFSAPAVPSGTGQTSAELEVQ---RRHSLVSFVVRIVPSPD-----WFVGVDSLD 169
                                                                                                                                                                                                                                                                       303 VHCVL-CPRNPDDGGSFVQDLQISTMFTHHQKIVVVDSAMPNGDSQRRRIVSFVG--GLD 359
                                                                                                                                                                                                                                                                                                            170 LCDGDRWREQAALDLYPYDAGTDSGF-----TFSSPNFATIPQDTVTEITSSSPSH 220
                                                                                                                                                                                                                                                                                                                                                                                ----RVTLVRLRQSPRAFIPPAPVLPSRDNE 264
                                                                                                                                                                                                                                                                                                                                                                                                                                                  265 I-----VDSASV---PETPLDCEVSLWSSWGLCGGHCGRLGTKSRTRYVR-VQPANN 312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   459 AWNVQLFRSIDGGAAFGFPETPEDAPEA----GLVSGKDNIIDRSIQDAYIHAIRRAKN 513
                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                             360 LCDG-----AYDSPFHSLFRTLDSAHHDDFHQPNFAG-----ASIEKGGPRE 401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Luiten R.G.M., Putterman D.G., Schoenmakers J.G.G., Konings R.N.H.,
                                                                                                                                                                                                   16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5.8%; Score 102; DB 1; Length 483; 25.8%; Pred. No. 0.52; tive 24; Mismatches 84; Indels
                                                                                                                                                              Ouery Match 6.1%; Score 107; DB 1; Length 808; Best Local Similarity 24.6%; Pred. No. 0.38; Matches 59; Conservative 24; Mismatches 81; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           L -> F (IN STRAIN NEW-YORK).
DCBBAA598BA700BB CRC64;
                                                                                          L -> I (IN REF. 2).
E75F6CFFB9ADF3CB CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         21-JUL-1986 (Rel. 01, Created)
21-JUL-1986 (Rel. 01, Last sequence update)
01-MAR-1989 (Rel. 10, Last annotation update)
                                                         PHOSPHOLIPASE D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Viruses; ssDNA viruses; Inoviridae; Inovirus.
NCBL_TaxID=10872;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            483 AA
PROSITE; PS50004; C2_DOMAIN_2; 1.
Hydrolase; Lipid degradation; Calcium.
PROPEP 1 30
                                                                             C2 DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STRAIN=NEW-YORK, AND NIJMEGEN;
MEDLINE=85293231; PubMed=3928901;
                                                       808
109 C;
268
1992 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             419 I
52197 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MINOR COAT PROTEIN (ORF 483).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EMBL; M11912; AAA88379.1; -. EMBL; M19377; AAA88388.1; -.
                                                                                                                                                                                                                                                                                                                                                                                221 PANSFYYPRLKALPPIA----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PIR; A04232; VCBPI3.
                                                                                            268 2
808 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              483 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Bacteriophage Pf3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Coat protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    62;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COA2_BPPF3
P03624;
                                                                                            CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Best Local
Matches 6
                                                                           DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COA2_BPPF3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT
         SETTES
                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                            ŏλ
                                                                                                                                                                                                                                                                                                                                             qd
                                                                                                                                                                                                                                                                                                                                                                                Q
                                                                                                                                                                                                                                                                                                                                                                                                               Ob
                                                                                                                                                                                                                                                                                                                                                                                                                                                  ολ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Dp
```

7 AAALGKALCALLLAT----LGAAGQPL--GGESICSARALAKYSITFTGKWSQTAFPK 58

δy

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation-the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb.sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STRAIM-CV. COLUMNIA;

MEDLINE=21016719; PubMed=11130712;

MIDLINE=21016719; PubMed=11130712;

Minte O., Alonso J., Altafi H., Araujo R., Bowman C.L., Brooks S.Y.,

White O., Alonso J., Altafi H., Araujo R., Bowman C.L., Brooks S.Y.,

Buebler E., Chan A., Chao Q., Chen H., Cheuk R.F., Chin C.W.,

Chung M.K., Conn L., Conway A.B., Conway A.R., Creasy T.H., Dewar K.,

Dunn P., Ergu P., Feldblyum T.V., Feng J.-D., Fong B., Fulii C.Y.,

A Lunner J.L., Jenkins J., Johnson-Hopson C., Khan S., Khaykin E.,

A Hunter J.L., Jenkins J., Johnson-Hopson C., Khan S., Khaykin E.,

A Lin X., Liu S.X., Lee A., Lee J.M., Lenz C.A., Li J.H., Li Y.-P.,

Lin X., Liu S.X., Liu Z.A., Luros J.S., Maiti R., Marziali A.,

Milischer J., Miranda M., Nguyen M., Nlerman W.C., Osborne B.I.,

Rakano H., Salzberg S.L., Schwartz J.R., Shinn P., Southwick A.M.,

Sun H., Tallon L.J., Tambunga G., Toriumi M.J., Town C.D.,

Utterback T., Van Aken S., Vaysberg M., Vysotskaia V.S., Walker M.,

"Sequence and analysis of chromosome I of the plant Arabidopsis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     20-AUG-2001 (Rel. 40, Last sequence update)
20-AUG-2001 (Rel. 40, Last annotation update)
49-HOSPHOLIPASE D 2 PRECUBSOR (EC 3.1.4.4) (FLD 2) (CHOLINE PHOSPHATASE
2) (PHOSPHATIDYLCHOLINE-HYDROLYZING PHOSPHOLIPASE D 2).
172 EYEPDPRSVPGWYSYNGNPVWVSAVEDVGFT-WRYWYFADVLMDGQGRPNYLVAYSDSGP 230
                                                                                                                                                    102 - EAWALMKEIEAAGEALQSVHAVFSAPAVPSGTGQTSAELEVQRRHSLVSFVVRIVPSPD 160
                                                                                                                                                                                                                                             161 WFVGVDSLDLCDGDRWREQAALDLYPYDAGTDSGFTFSSPNFATIPQDTVTEITSSSPSH 220
                                                                                                                                                                                                                                                                    Arabidopsis thaliana (Mouse-ear cress).
Eukaryota, Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosidae;
eurosids II; Brassicales; Brassicaceae; Arabidopsis.
                                                              -----KNOYVSNGLRDFAERG- 101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -1- FUNCTION: PLAYS AN IMPORTANT ROLE IN VARIOUS CELLULAR PROCESSES -:- CATALYTIC ACTIVITY: A PHOSPHATIDYLCHOLINE + H(2)0 = CHOLINE + A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -!- COFACTOR: CALCIUM (BY SIMILARITY).
                                                                                                                                                                                231 NEYWQ-----DVGGYSLDSL-----PTEPEFVPLTDAELE-----
                                                                                                                                                                                                                                                                                                                                                                                                    810 AA
                                                                 QY-PLFRPPAQWSSLLG----AAHSSDYSMWR---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL; AC008016; AAD55607.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                  (Rel. 40, Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PLD2 OR AT1G52570 OR F6D8.21.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  InterPro; IPR000008; C2.
InterPro; IPR001736; PLD.
Pfam; PF00614; PLDC; 2.
SMART; SM00239; C2; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Nature 408:816-820(2000).
                                                                                                                                                                                                                                                                                                                                                                                                      STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PHOSPHATIDATE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NCBI_TaxID=3702;
                                                                                                                                                                                                                                                                                                                                                                                                                                                20-AUG-2001
                                                                                                                                                                                                                                                                                                                                                                                                    PLD2_ARATH
Q9SSQ9;
                                                                                                                                                                                                                                                                                                                                                                               PLD2_ARATH
                                                                 59
                                                                                                                                                                                                                                                                                                                                                          RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Op
                                                                 ŏ
                                                                                                          a
                                                                                                                                                  ò
                                                                                                                                                                                              q
                                                                                                                                                                                                                                             ŏ
                                                                                                                                                                                                                                                                                       a
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the Buropean Bloinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                    10;
                                                                                                                                                                                                                                                                                                                                                                   ---RVTLVRLRQSPRAFIPPAPVLPSRDNEI-----VD---SASVP 272
                                                                                                                                                                                                                                                                                                                                                                                                                                            129 VPSGTGQTSAELEVORRHSLVSFVVRIVPSPDWFVGVDSLDLCDGDRWREQAALDLYPYD 188
                                                                                                                                                                                                                                                                                               342 MPSGG-----SRSRRIVSF----RYD 367
                                                                                                                                                                                                                                                                                                                                          189 AGTDSGF-----TFSSPNFATIPQDTVTEITSSSPSHPANSFYYPRLKALPPIA-- 237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -:- FUNCTION: C8 IS A CONSTITUENT OF THE MEMBRANE ATTACK COMPLEX.
C8 BINDS TO THE C5B-7 COMPLEX, FORMING THE C5B-8 COMPLEX. C5-B8
BINDS C9 AND ACTS AS A CATALYST IN THE POLYMERIZATION OF C9.
-:- SUBUNIT: C8 IS COMPOSED OF THREE CHAINS: ALPHA, BETA AND GAMMA.
THE BETA CHAIN BINDS TO THE C8 ALPHA CHAIN AND TO THE C5B-C7
COMPLEX, PRESUMABLY TO C5B. IT IS ESSENTIAL TO THE INCORPORATION
                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    OF C8 INTO THE C5B-C8 COMPLEX.
-!- SIMILARITY: TO COMPLEMENT FACTORS C6, C7, C9, AND TO PERFORIN.
-!- SIMILARITY: CONTAINS 2 TSP TYPE-1 DOMAINS.
-!- SIMILARITY: CONTAINS 1 EGF-LIKE DOMAIN.
-!- SIMILARITY: CONTAINS 1 LDL-RECEPTOR CLASS A DOMAIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Oryctolagus cuniculus (Rabbit).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Lagomorpha; Leporidae; Oryctolagus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  "Characterization of rabbit complement component C8. Functional evidence for the species-selective recognition of C8 alpha by homologous restriction factor (ED59).";
J. Immunol. 152:2501-2508(1994).
                                                                                                                                                                                                                    79;
                                                                                                                                                                          Query Match 5.7%; Score 100.5; DB 1; Length 810;
Best Local Similarity 25.7%; Pred. No. 1.3;
                                                                                                                                                                                                                    40; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STRAIN=NEW ZEALAND WHITE; TISSUE=Liver;
MEDLINE-94179833; PubMed=7510745;
White R.V., Kaufman K.M., Letson C.S., Platteborze P.L.,
                                                                                                                    F1FA36D8C9CFBCCA CRC64;
                                                          BY SIMILARITY.
PHOSPHOLIPASE D 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-FEB-1996 (Rel. 33, Created)
01-FEB-1996 (Rel. 33, Last sequence update)
20-AUG-2001 (Rel. 40, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPLEMENT COMPONENT C8 BETA CHAIN PRECURSOR
                                                                                                                                                                                                                    17; Mismatches
SMART; SM00155; PLDC; 2.
PROSITE; PS50004; C2_DOMAIN_2; FALSE_NEG.
Hydrolase; Lipid degradation; Calcium.
                                                                                                   C2 DOMAIN.
                                                                                                                    91597 MW;
                                                                                                                                                                                                                      47; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STANDARD;
                                                                               810
                                                                                                                    810 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NCBI_TaxID=9986;
                                                                               37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sodetz J.M.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      273 ETP 275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            479 DSP 481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CO8B_RABIT
                                                                                                                      SEQUENCE
                                                                                                   DOMAIN
                                                            PROPEP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CO8B_RABIT
                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                         238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SOFFFE
                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                            ολ
                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
```

ب بسب (و

```
9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnollophyta; Liliopsida; Poales; Poaceae; PACC clade;
Panicoideae; Andropogoneae; Zea.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STRAIN=CV. MO17;
MEDLINE-96012933; PubMed=7551587;
UGKi J., MOrioka S., Komari T., Kumashiro T.;
"Purification and characterization of phospholipase D (PLD) from rice
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  246 QSPRAFIPPA---PVLPSRDNEIVDSASVPETPLDCEVSLWSSWGLCGGHCGRLGTKSRT 302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         28; Indels 13; Gaps
                                                                                                                                                                                                                                                          Complement pathway; Complement alternate pathway; Glycoprotein;
Signal; Plasma; Membrane attack complex; Cytolysis; EGF-like domain;
Repeat; Transmembrane.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-NOV-1997 (Rel. 35, Created)
01-NOV-1997 (Rel. 35, Last sequence update)
01-SDEC-1998 (Rel. 37, Last annotation update)
PHOSPHOLIPASE D PRECURSOR (EC 3.1.4.4) (PLD) (CHOLINE PHOSPHATASE)
(PHOSPHATIDYLCHOLINE-HYDROLYZING PHOSPHOLIPASE D).
                                                                                                                                                                                                                                                                                                                                                                                                                      BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

N-LINKED (GLCNAC. ..) (POTENTIAL).

N-LINKED (GLCNAC. ..) (POTENTIAL).
                                                                                                                                                                                                                                                                                                                            COMPLEMENT COMPONENT C8 BETA CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5.7%; Score 99.5; DB 1; Length 590;
33.3%; Pred. No. 1.1;
Ive 15; Mismatches 28; Indels 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SAED81B15F2CCC2C CRC64;
                                                                                                                                                                                                                                                                                                                                                       LDL-RECEPTOR CLASS A.
                             LILGEPPTO; IPRO02172; LILEGCECPL_A.

DR InterPro; IPRO01862; MAC_perforin.

DR Pfam; PP00057; Idl_recept_a; 1.

Pfam; PF01823; MACPF; 1.

DR Pfam; PF01823; MACPF; 1.

DR Pfam; PF01823; MACPF; 1.

DR RINTS; PR00764; COMPLEMENTC9.

RMART; SM00192; LDLa; 1.

RMART; SM00192; LDLa; 1.

RMART; SM00192; LDLa; 1.

RMART; SM00209; TSP1; 2.

R PROSITE; PS01086; EGF_2; 1.

R PROSITE; PS01186; EGF_2; 1.

R PROSITE; PS01099; LDLRA_1; 1.

R PROSITE; PS01099; LDLRA_1; 1.

R PROSITE; PS01099; LDLRA_2; 1.

R PROSITE; PS01099; LDLRA_2; 1.

R PROSITE; PS01099; TSP1; 2.

COMPLEMENT DATHWAN. C.-.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     812 AA.
                                                                                                                                                                                                                                                                                                                                                                                              EGF-LIKE,
TSP TYPE-1 2.
                                                                                                                                                                                                                                                                                                                                             TYPE-1
                                                                                                                                                                                                                                                                                                                                                                                   POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                    POTENTIAL.
                                                                                                                                                                                                                                                                                                                  POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      303 RYV-RVQPAN-NGSPCPELEEEAE 324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 85 RHAYLLRPSQFNGEPCNFSDKEVE 108
                          InterPro; IPR000561; EGF-like.
InterPro; IPR002172; LDL_recep
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ž
L26980; AAA31192.1; -. P00750; 1TPG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            33,3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        66857
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         28; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STANDARD;
                                                                                                                                                                                                                                                                                                              54
1119
1157
1328
3328
535
                                                                                                                                                                                                                                                                                                                                                                                                                                                    155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          101
590 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                27
55
64
1120
3312
499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Zea mays (Maize)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NCBI_TaxID=4577;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PLD_MAIZE
Q43270;
                                                                                                                                                                                                                                                                                                                                                                    TRANSMEM
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                    DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                         DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DISULFID
                                                                                                                                                                                                                                                                                                   SIGNAL
                                                                                                                                                                                                                                                                                                                PROPEP
                                                                                                                                                                                                                                                                                                                                          DOMAIN
                                                                                                                                                                                                                                                                                                                                                        DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                              DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                           DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PLD_MAIZE
 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation-the Buropaen Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  127 PAVPSGTGQTSAELEVQ---RRHSLVSFVVRIVPSPD------WFVGVDSLDLCDGDRW 176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            20-AUG-2001 (Rel. 40, Created)
20-AUG-2001 (Rel. 40, Last sequence update)
20-AUG-2001 (Rel. 40, Last annotation update)
20-AUG-2001 (Rel. 40, Last annotation update)
40-AUG-2001 (Rel. 40, Last annotation update)
20-AUG-2001 (Rel. 40, Last annotation update)
21 (PHOSPHATIDYLCHOLINE-HYDROLYZING PHOSPHOLIPASE D 2).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              177 REQ-----AALDLYPYDAGTDSGFTFSSPNFATIPQDTVTEITSSSPSHPANSFYYPRLK 231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  370 DTQYHSLFRTLDTVHHD------DFHQPNFEG-----GSIKKGGPREPWHDI-HSRLE 415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota, Viridiplantae, Streptophyta, Embryophyta, Tracheophyta, Spermatophyta, Magnoliophyta, eudicotyledons, core eudicots, Rosidae, eurosids II, Brassicales, Brassicaceae, Brassica.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        232 ALPPIA------VD 267
(Oryza sativa L.) and cloning of cDNA for PLD from rice and maize
                                  Plant Cell Physiol. 36:903-914(1995).
-!- FUNCTION: PLAYS AN IMPORTANT ROLE IN VARIOUS CELLULAR PROCES
-!- CATALYTIC ACTIVITY: A PHOSPHATIDYLCHOLINE + H(2)0 = CHOLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match 5.7%; Score 99.5; DB 1; Length 812; Best Local Similarity 25.7%; Pred. No. 1.6; Matches 49; Conservative 19; Mismatches 62; Indels 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
Kim D.U., Lee J.E., Hoe K.R., Jang Y.J., Rho T.Y., Yoo H.S.,
Choi M.-U.;
                                                                                                          -!- COFACTOR: CALCIUM (BY SIMILARITY).
-!- SUBUNIT: MONOMER (BY SIMILARITY).
-!- SIMILARITY: BELONGS TO THE PHOSPHOLIPASE D FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                D05CB351655BCC61 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      POTENTIAL.
PHOSPHOLIPASE D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Brassica oleracea var. capitata (Cabbage)
                                                                                                                                                                                                                                                                                                        or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              C2 DOMAIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Hydrolase; Lipid degradation; Calcium.
                                                                                                                                                                                                                                                                                                                                                                                                                                          SMART; SM00239; C2; 1.
SMART; SM00155; PLDC; 2.
PROSITE; PS50004; C2_DOMAIN_2; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              92242 MW;
                                                                                                                                                                                                                                                                                                                                                EMBL; D73410; BAA11135.1; -.
                                                                                                                                                                                                                                                                                                                                                                                  InterPro; IPR000008; C2.
InterPro; IPR001736; PLD.
Pfam; PF00614; PLDc; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PLD2_BRAOC STANDARD
P55939; 049981; 082548;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  268 SASV---PETP 275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      474 GGAAFGFPETP 484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                812 AA;
                                                                                                PHOSPHATIDATE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NCBI_TaxID=3716;
                                                                                                                                                                                                                                                                                                                                                                    MaizeDB; 113853
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 10
PLD2_BRAOC
q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Op
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Qγ
```

```
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PROPEP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BAI1_HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DE LIE
ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δŏ
                                                                                                                                                                                                                                                              This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation-the European Bioinformatics Institute. There are no restrictions on its mose by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       168 LDLCDGDRWREQAALDLYPYDAGTDSGF-----TFSSPNFATIPQDTVTEITSSSP 218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               362 IDLCDG-----TGASITKGGP 403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          219 SHPANSFYYPRLKALPPIA-------RVTLVRLRQSPRAFIPPAPVLPSRD 262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               404 REPWQDI-HSRLEG--PIAWDVLYNFEQRWSKQGGKDILVKLRELSDIIITPSPVMFQED 460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     120 VHAVFSAPAVPSGTGQTSAELEVQ---RRHSLVSFVVRIVPSPDW-----FVGVDS 167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               305 VHCVL-CPRNPDDGGSIVQNLQVSAMFTHHQKIVVVDSEVPSQGGGSEMRRIMSFVG--G 361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             67; Indels 77; Gaps
                                                                                                                                                                       Pannenberg I., Mansfeld J., Ulbrich-Hofmann R.; "Cloning of phospholipase D from Brassica oleracea var. capitata."; Submitted (DEC-1998) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                   PHOSPHATIDATE.
-!- COFACTOR: CALCIUM. OPTIMAL PH DEPENDS ON CALCIUM CONCENTRATION.
-!- SIMILARITY: BELONGS TO THE PHOSPHOLIPASE D FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5.6%; Score 98.5; DB 1; Length 812;
25.9%; Pred. No. 1.9;
tive 19; Mismatches 67; Indels 77
                                                                                                                                       Abousalham A., Riviere M., Teissere M., Verger R.; "Improved purification and biochemical characterization of
  "Cloning of phospholipase D from cabbage.";
Submitted (NOV-1998) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      C2 DOMAIN.
Q -> E (IN REF. 3).
F771FC53734E7A2B CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          263 NEI------VD---SASVPETPLDCEVSLWSSWGLCGG 291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PHOSPHOLIPASE D 2
                                                                                                                                                                                                                                                                                                                                                                                EMBL, AF090444, AAC78486.1, -...
EMBL, AF13919, AAD17209.1; -...
Mendel, 27805, Bracd.1,1491;27805.
InterPro; IPR001008, C2.
InterPro; IPR001736; PLD.
Pfam; PF00614; PLDC; 2.
SWART; SW00155; PLDC; 2.
PROSITE; PS50004; C2_DOMAIN_2; FALSE_NEG.
Hydrolase; Lipid degradation; Calcium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    808 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRT;
                                                                                                                            MEDLINE=93357261; PubMed=8353126;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PLD_TOBAC STANDARD; P93400; P93400; P93399; 15-DEC-1998 (Rel. 37, Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               92061 MW;
                                                                                                                                                                phospholipase D from cabbage.
                                                                                                                                                                                                                                                                                                                                                                       EMBL; U85482; AAC79125.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              57; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 812 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Local Similarity
                                      SEQUENCE FROM N. A.
                                                                                                     SEQUENCE OF 38-68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ery Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PROPEP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             tches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PLD_TOBAC
                                                                                                                                                                                                                                                       ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           á
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its most by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  127 PAVPSGTGQTSAELEVQ---RRHSLVSFVVRIVPSPD-----WFVGVDSLDLCDGDRW 176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 364 ------RYDTPFHSLFRTLDTAHHDDFHQPNF---PDGALTKGGPREPWHDIHS--- 408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         228 PRLKALPPIA------ RVTLVRLRQSPRAFIPPAPVLPSRDNEI----- 265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             409 -RLEG--PIAWDVLFNFEQRWRKQGGKDVLVNFRELDDIIIPPSPVMHLDDSETWNVQLF 465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     309 PRNPDDGGSIVQSLQIGTMFTHHQKIVVVDSELPSGESEKRRILSFVG--GIDLCDG--- 363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             177 REQAALDLYPYDAGTDSGF-----TFSSPNFATIPQDTVTEITSSSPSHPANSFYY 227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FUNCTION: PLAYS AN IMPORTANT ROLE IN CELLULAR PATHWAYS INCLUDING SIGNAL TRANSDUCTION PATHWAYS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -!- CATALYTIC ACTIVITY: A PHOSPHATIDYLCHOLINE + H(2)O = CHOLINE + A
15-DEC-1998 (Rel. 37, Last sequence update)
15-DEC-1998 (Rel. 37, Last annotation update)
16-DEC-1998 (Rel. 37, Last annotation update)
16-DEC-1998 (Rel. 37, Last annotation update)
(PHOSPHATIDYLCHOLINE-HYDROLYZING PHOSPHOLIPASE D).
Nicotiana tabacum (Common tobacco).
Bikaryota: Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
Asteridae; euasterida I; Solanales; Solanaceae; Nicotiana.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              79; Indels 75;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 266 -- VDSASV--- PETPLDCEVSLWSSWGLCGGHCGRLGTKSRTRYVR-VQPANN 312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match 5.6%; Score 97.5; DB 1; Length 808; Best Local Similarity 24.0%; Pred. No. 2.3; Matches 56; Conservative 23; Mismatches 79; Indels 7
                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
STRAIN=CV. SR1; TISSUE-Leaf;
Lein W., Saalbach G.;
Submitted (FEB-1997) to the EMBL/GenBank/DDBJ databases.
-- FUNCTION: PLAYS AN IMPORTANT ROLE IN CELLULAR PATHWA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2937FCA5D5C60B6A CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -i- COFACTOR: CALCIUM (BY SIMILARITY).
-i- SIMILARITY: BELONGS TO THE PHOSPHOLIPASE D FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 20-AUG-2001 (Rel. 40, Created)
20-AUG-2001 (Rel. 40, Last sequence update)
20-AUG-2001 (Rel. 40, Last annotation update)
BRAIN-SPECIFIC ANGIOGENESIS INHIBITOR 1 PRECURSOR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BY SIMILARITY.
PHOSPHOLIPASE D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRT; 1584 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              C2 DOMAIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pfam; PF00168; C2; 1.
Pfam; PF0014; PLDC; 2.
SMART; SM00239; C2; 1.
SMART; SM00155; PLDC; 2.
PROSITE; PS50004; C2_DOMAIN_2; 1.
Hydrolase; Lipid degradation; Calcium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                91966 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL; 284822; CAB06620.1; -.
InterPro; IPR000008; C2.
InterPro; IPR001736; PLD.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE 808 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PHOSPHATIDATE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BAI1_HUMAN
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@lsb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                            -!- SUBCELLULAR LOCATION: INTEGRAL MEMBRANE PROTEIN. LIKELY TO BE CONCENTRATED AT CELL-CELL ADHESION SITES.
-!- TISSUB SPECIFICITY: SPECIFICALLY EXPRESSED IN BRAIN. REDUCED OR NC EXPRESSION IS OBSERVED IN SOME GLIOBLASTOMA CELL LINES AND CANCER
                                                                                                                                              Nishimori H., Shiratsuchi T., Urano T., Kimura Y., Kiyono K., Tatsumi K., Yoshida S., Ono M., Kuwano M., Nakamura Y., Tokino T.; An novel brain-specific p53-target gene, BAII, containing thrombospondin type 1 repeats inhibits experimental angiogenesis."; Oncogene 15:2145-2150(1997).
                                                                                                                                                                                                                                                                                                                              SIMILARITY: BELONGS TO FAMILY 2 OF G-PROTEIN COUPLED RECEPTORS. SIMILARITY: CONTAINS 5 TSP TYPE-1 DOMAINS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BRAIN-SPECIFIC ANGIOGENESIS INHIBITOR
                               Eukaryota; Metazoa; Chordata; Cranlata; Vertebrata; Euteleostomi;
Mammalla; Eutherla; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TISSUES.
-!- INDUCTION: BY P53.
-!- DOMAIN: THE TSP1 REPEATS INHIBIT IN VIVO ANGIOGENESIS IN RAT CORNEA INDUCED BY BEGE.
                                                                                                                                                                                                                                                                                                                "Cloning and characterization of BAI-associated protein 1; a PDZ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PROSITE; PS00649; G_PROTEIN_RECEP_F2_1; FALSE_NEG.
PROSITE; PS00650; G_PROTEIN_RECEP_F2_2; FALSE_NEG.
G-protein coupled receptor; Transmembrane; Glycoprotein; Signal;
                                                                                                                                                                                                                                                                              Shiratsuchi T., Futamura M., Oda K., Nishimori H., Nakamura Y.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4 (POTENTIAL).
EXTRACELLULAR (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CYTOPLASMIC (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CYTOPLASMIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            InterPro; IPR000832; GPCR_secretin.
InterPro; IPR000203; PKD_cys_rich.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             InterPro; IPR000884; TSP1.
InterPro; IPR001879; hormn_rcptor.
                                                                                                                                                                                                                                                                MEDLINE=98321173; PubMed=9647739;
                                                                                                               TISSUE-Fetal brain;
MEDLINE-98054121; PubMed-9393972;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL; AB005297; BAA23647.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pfam; PF00002; 7tm_2; 1. Pfam; PF01825; GPS; 1. Pfam; PF000090; tsp_1; 5. SMART; SM00008; Horms; 1. SMART; SM00008; Horms; 1. SMART; SM00009; TSP1; 5.
                                                                                                                                                                                                                                                 INTERACTION WITH BAP1
               Homo sapiens (Human).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Repeat; Cell adhesion
                                                                                                  SEQUENCE FROM N.A.
                                                                 NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             602682;
                                                                                                                                                                                                                                                                                                   Tokino T.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DOMAIN
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DOMAIN
29999999999999999999999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DR
DR
DR
DR
DR
ET
FT
FT
FT
FT
```

```
20;
                                                                                                                                                                                                                                                                                                                                                     CELL ATTACHMENT SITE (POTENTIAL).
NECESSARY FOR INTERACTION WITH BAP1.
INDISPENSABLE FOR INTERACTION WITH BAP1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          21.9%; Pred. No. 5.6;
Live 30; Mismatches 131; Indels 142; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               118 QSVHAVFSAPAVPSGTGQTSAELEVQRRHSLVSFVVRIVPSPDWFVGVDSLD----LCDG 173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ------RWREQAALDLYPYDAGTDSGFTFSSPNFATI----PQDTVTE-- 212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      130 SAPLAFLQASKQFLQMRRQQPPQHDGLRPRAGPPGPTDDFSVEYLVVGNRNPSRAACQML 189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               190 CRWLDACLAGSRSSHPCG-------IMQTPCACLGGEAGGPAAGPLA 229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                230 PRGDVCLRD--AVAGGPENCLISLIQDRGGHGAIGGWKLWSLWGECIRDCGG-GLQIRFR 286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      58 KQYPLFRPPAQWSSLLGAAHSSDYSMWRKNQYVSNGLRDFAERGEAWALMKEIEAAGEAL 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               213 -----ITSSSPSHPANSFYYPRLKALPPIARVTLVRLRQSPRAFI-----PPA-PVL 258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        259 PSRDNEIVDSASVPETPLDCEVS------LWSSWGLCGGHCGRLGTKSRTR 303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8 PGPVWILAPLL--LLLLLLGRRARAAGADAGPGPEPCATLVQGK----FFGYFSAAAV- 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4 PSPAAALGKALCALLLATLG-----AAGQPLG-GESICSARALAKYSITFTGKWSQTAFP 57
                                                                                                                                                                                                                                                                                                                                                                                                                                        (GLCNAC. .) (POTENTIAL).
(GLCNAC. .) (POTENTIAL).
(GLCNAC. .) (POTENTIAL).
(GLCNAC. .) (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             N-LINKED (GLCNAC. . .) (POTENTIAL)
N-LINKED (GLCNAC. . .) (POTENTIAL)
MW; DEA8F28C77874513 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (GLCNAC. . .) (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5.5%; Score 97; DB 1; Length 1584;
5 (POTENTIAL).
CYTOPLASMIC (POTENTIAL).
6 (POTENTIAL).
EXTRACELLULAR (POTENTIAL).
                                                                                                         7 (POTENTIAL).
CYTOPLASHIC (POTENTIAL).
TSP TYPE-1 1.
TSP TYPE-1 2.
TSP TYPE-1 3.
TSP TYPE-1 4.
TSP TYPE-1 4.
PSP TYPE-1 5.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        01-FEB-1996 (Rel. 33, Created)
01-FEB-1996 (Rel. 33, Last sequence update)
15-DEC-1998 (Rel. 37, Last annotation update)
BETA-GALACTOSIDASE PRECURSOR (EC 3.2.1.23) (LACTASE).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61 --FPANASRCSWT--LRNPDPRRYTLYMK-----
                                                                                                                                                                                                                                                                                                                                                                                                                                          N-LINKED (N-LINKED (N-LINK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 N-LINKED
N-LINKED
                                                                                                                                                                                                                                                                                                                                 POLY - PRO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 304 YVRVQPANNGSPCP-ELEEEAECVPDNC 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    287 TCLPAPGVEGGCEGVLEEGRQCNREAC 314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   173531
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local Similarity 21.99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STANDARD;
                                                                                                                                                                                                                                                                                                  1422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 401
607
692
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1584 AA;
                                                                                                                                                                                                                                                                                                                                                     231
1365
1581
                                                                                                                                                                                                                                                                                                       1411
1425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BGAL_XANMN
P48982;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     174 D---
     PRANSMEM
                                                        RANSMEM
                                                                                                              RANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                        CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CARBOHYD
                         DOMAIN
                                                                                     DOMAIN
                                                                                                                                                                                              DOMAIN
                                                                                                                                                                                                                                                                                                                                 OMAIN
                                                                                                                                                                                                                                                                                                                                                                                 DOMAIN
                                                                                                                                           COMAIN
                                                                                                                                                                                                                        DOMAIN
                                                                                                                                                                                                                                                 DOMAIN
                                                                                                                                                                                                                                                                           DOMAIN
                                                                                                                                                                                                                                                                                                     DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                 DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BGAL_XANMN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
     qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   öλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        qq.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ω
```

Bacteria; Proteobacteria; gamma subdivision; Xanthomonas group;

Xanthomonas manihotis

NCBI_TaxID=43353;

Xanthomonas

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its modified anor-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STRAIN=CV. KOSHIHIKARI;
MEDLINE=96012933; PubMed=7551587;
Ueki J., Morioka S., Komari T., Kumashiro T.;
"Purification and characterization of phospholipase D (PLD) from rice (Oryza sativa L.) and cloning of CDNA for PLD from rice and maize "Rea mays L.).";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          01-NOV-1997 (Rel. 35, Created)
01-NOV-1997 (Rel. 35, Last sequence update)
15-DEC-1998 (Rel. 37, Last annotation update)
19-DSPHOLIPASE D 1 PRECURSOR (EC. 31.4.4) (PLD 1) (CHOLINE PHOSPHATASE 1) (PHOSPHATIDYLCHOLINE-HYDROLYZING PHOSPHOLIPASE D 1).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  220 HPANSFYYPRLKALPPIA--------RVTLVRLRQSPRAFIPPAPVLPSRDN 263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       120 VHAVFSAPAVPSGTGQTSAELEVQ---RRHSLVSFVVRIVPSPDW------FVGVDSL 168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             304 VHCIL-CPRNPDDGGSIVQNLQVSAMFTHHQKIVVVDSEMPSRGGSQMRRIVSFVG--GI 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   169 DLCDGDRWREQAALDLYPYDAGTDSGF-----TFSSPNFATIPQDTVTEITSSSPS 219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 361 DLCDG-----TGAAITKGGPR 402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Oryza sativa (Rice).
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Epermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae;
Ehrhartoideae; Oryzeae; Oryza.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  71;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5.5%; Score 96.5; DB 1; Length 810; 25.1%; Pred. No. 2.7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CBC5B3D7E1F0DAAB CRC64;
                                                              1- SIMILARITY: BELONGS TO THE PHOSPHOLIPASE D FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BY SIMILARITY. PHOSPHOLIPASE D 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            812 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mendel; 33136; Braod;1491;33136.
InterPro; IPR000008; C2.
InterPro; IPR001736; PLD.
Pfan; PF00614; PLDc; 2.
SMART; SM00239; C2; 1.
SMART; SM00239; C2; 1.
FMOSITE; PS50004; C2_DOMAIN_2; FALSE_NEG.
Hydrolase; Lipid degradation; Calcium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     C2 DOMAIN.
                             COFACTOR: CALCIUM (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (Zea mays L.).";
Plant Cell Physiol. 36:903-914(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 264 EI-----VD---SASVPETP 275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   460 DVWNVQLFRSIDGGAAAGFPESP 482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      19;
                                                                                                                                                                                                                                                                                                                                                                                                               EMBL; AF113918; AAC78487.1; -. EMBL; AF113918; AAD17208.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             810 AA; 91837 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Best Local Similarity
PHOSPHATIDATE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         51;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PLD1_ORYSA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PROPEP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    043007
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PLD1_ORYSA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PLD1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AC COCCOS SET THE SET 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Š
ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its web by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@lsb-sib.ch).
                                                                                                                                                                                                                beta-galactosidases.";
Glycobiology 5:603-610(1995).
-!- FUNCTION: PREFERENTIALLY HYDROLYZES BETA(1->3) GALACTOSYL LINKAGES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       20-AUG-2001 (Rel. 40, Created)
20-AUG-2001 (Rel. 40, Last sequence update)
20-AUG-2001 (Rel. 40, Last annotation update)
49-AUG-2001 (Rel. 40, Last annotation update)
1) (PHOSPHOLIPASE D 1 PRECURSOR (EC 3.1.4.4) (PLD 1) (CHOLINE PHOSPHATASE 1) (PHOSPHATIDYLCHOLINE-HYDROLYZING PHOSPHOLIPASE D 1).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     324 PQTTSYDYDAILDEAGHPTPKFALMR----DAIARVTGVQ------PPALPAP---- 366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Brassica oleracea var. capitata (Cabbage).
Eukaryota: Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosidae;
Suroids II; Brassicales; Brassicaceae; Brassica.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            161 WF-----VGVDSLDLCDGDRW--REQAALDLYPYDAGTDSGFTFSSPNFATIPQDTVT 211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              265 WFDHWGKPHAATDARQQAEEFEWILRQGHSANLYMFIGGTSFGF-MNGANFQNNPSDHYA 323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   212 EITSS-----SPSHPANSFYYPRLKALPPIARVTLVRLRQSPRAFIPPAPVLPSRDN 263
                                                                                                  Taron C.H., Benner J.S., Hornstra L.J., Guthrie E.P.; A novel beta-galactosidase gene isolated from the bacterium Xanthomonas manihotis exhibits strong homology to several eukaryotic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          53; Indels 37; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pannenberg I., Mansfeld J., Ulbrich-Hofmann R.;
"Cloning of phospholipase D from Brassica oleracea var. capitata.";
Submitted (DEC-1998) to the EMBL/Genbank/DDBJ databases.
-i. FUNCTION: PLAYS AN IMPORTANT ROLE IN VARIOUS CELLULAR PROCESSES.
-i. CATALYTIC ACTIVITY: A PHOSPHATIDYLCHOLINE + H(2)O = CHOLINE + A
                                                                                                                                                                                                                                                                                                               OVER BETA(1->4) LINKAGES. HAS A PH OPTIMUM OF 4.5.
-!- CATALYTIC ACTIVITY: HYDROLYSIS OF TERMINAL, NON-REDUCING BETA-D-GALACTOSE RESIDES IN BETA-O-GALACTOSIDES.
-!- SIMILARITY: BELONGS TO FAMILY 35 OF GLYCOSYL HYDROLASES.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5.5%; Score 96.5; DB 1; Length 598; 26.8%; Pred. No. 1.9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PROTON DONOR (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NUCLEOPHILE (POTENTIAL).
DB4C3F05E01435BF CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BETA-GALACTOSIDASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            810 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          14; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           InterPro; IPR001944; Glyco_hydro_35.
Pfam; PF01301; Glyco_hydro_35; 1.
PROSITE; PS01182; GLYCOSYL_HYDROL_F35; 1.
   SEQUENCE FROM N.A., AND SEQUENCE OF 22-38
                                                                     MEDLINE=96121416; PubMed=8563148;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  264 EIVDSASVPETPLDCEVSLWSS 285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             367 --ITTTLPATPLRESASLWDN 386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Hydrolase; Glycosidase; Signal.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  66085 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL; L35444; AAC41485.1; -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  598 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local Similarity
nes 38; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NCBI_TaxID=3716;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PLD1 BRACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACT_SITE
ACT_SITE
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             082549;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 14
PLD1_BRAOC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PLD1.
```

g

ò g ŏ

DR DR DR FT FT SO

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@lsb-sib.ch).
                                                                                                                                                                                                                                                           -!- COFACTOR: CALCIUM.
-!- SUBUNIT: MONOMER.
-!- TISSUE SPECIFICITY: EXPRESS IN LEAVES, ROOTS, DEVELOPING SEEDS AND
                                                                                                                (In) Plant Gene Register PGR97-076.

-1- FUNCTION: PLAYS AN IMPORTANT ROLE IN VARIOUS CELLULAR PROCESSES.
THERMOSTABLE BETWEEN 4 AND 37 DEGREES CELSIUS, BUT ACTIVITY IS
REDUCED TO ONE THIRD OF THE ORIGINAL LEVEL AFTER INCUBATION AT 50
DEGREES CELSIUS FOR 30 MINUTES. OPTIMAL PH IS 6.0.
-1- CATALYTIC ACTIVITY: A PHOSPHATIDYLCHOLINE + H(2)0 = CHOLINE + A
PHOSPHATIDATE.
                                                                                                                                                                                                                                                                                                                                       -!- DEVELOPMENTAL STAGE: THE TRANSCRIPT BEGINS TO EMERGED IN SEEDS AS BARLY AS THE SECOND DAY AFTER IMBIBITION AND INCREASED AFTER RADICLE BARRGENORE ON THE THIRD DAY. STRONGLY EXPRESSED IN THE LEAVES, ROOTS AND RESIDUAL GRAIN OF SEEDLING EIGHT DAYS AFTER IMBIBITION. UNDEFECTABLE IN MATURE DRY SEEDS.
-!- SIMILARITY: BELONGS TO THE PHOSPHOLIPASE D FAMILY.
                                                           Morioka S., Ueki J., Komari T.; "Characterization of two Distinctive genomic clones for phospholipase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMEL; AB001920; BAA19467.1; -.
InterPro: IPR000008; C2.
InterPro: IPR001736; PLD.
Pfam: PF00614; PLDc; 2.
SMART: SM00159; PLDc; 2.
SMART: SM00155; PLDc; 2.
PROSTITE; PS0004; C2.DOMAIN.2; 1.
Hydrolase; Lipid degradation; Calcium; Multigene family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           C2 DOMAIN. 635F94E56CDEFD8F CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PHOSPHOLIPASE D 1.
                                          STRAIN-CV. KOSHIHIKARI; TISSUE-Leaf;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           114 C:
92209 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL; D73411; BAA11136.1; -.
                                                                                                                                                                                                                                                                                                                           CULTURED CELLS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                812 AA;
                                                                                                   D from rice.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PROPEP
```

```
12;
                                                               127 PAVPSGTGQTSAELEVQ---RRHSLVSFVVRIVPSPD------WEVGVDSLDLCDGDRW 176
                                                                                                                                                   177 REQ-----AALDLYPYDAGTDSGFTFSSPNFATIPQDTVTEITSSSPSHPANSFYYPRLK 231
                                                                                                                                                                                               232 ALPPIA-------VD 267
                                                                                                                                                                                                                            416 G--PIAMDVLYNFEGRWRKOGGKDLLLQLRDLSDTIIPPSPVMFPEDRETWNVQLFRSID 473
                                   61; Gaps
5.5%; Score 96.5; DB 1; Length 812; 25.7%; Pred. No. 2.7; tive 19; Mismatches 62; Indels 6
                                Conservative
                                                                                                                                                                                                                                                                268 SASV -- - PETP 275
Query Match
est Local Similarity
atches 49; Conserva
                                                                                                                                                                                                                                                                                               474 GGAAFGFPDTP 484
                                                                                              g
                                                                                                                              ò
                                                                                                                                                              q
                                                                                                                                                                                                 ò
                                                                                                                                                                                                                          q
```

Search completed: December 10, 2001, 20:04:23 Job time: 1098 sec

```
GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
```

OM protein - protein search, using sw model

December 10, 2001, 19:14:28 ; Search time 101.35 Seconds (without alignments) 477.712 Million cell updates/sec Run on:

US-09-170-042A-2 1756 Title: Perfect score: Sequence:

1 MENPSPAAALGKALCALLLA......NGSPCPELEEEAECVPDNCV 331

Scoring table:

473505 seqs, 146272329 residues BLOSUM62 Gapop 10.0 , Gapext 0.5 Searched: 473505 I number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

SPTREMBL_17:* Database :

sp_plant:*
sp_rodent:*
sp_virus:*
sp_vertebrate:*
sp_unclassified:* sp_archea:*
sp_bacteria:*
sp_fung1:*
sp_fung1:*
sp_human:*
sp_nvertebrate:*
sp_mammal:*
sp_nhc:*
sp_organele:*
sp_phage:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

		Description	0911.W1		· S					042113 brachydanio	09W770 09W770 qallus qal	0	Q9GLX9 Q9qlx9 bos taurus		076822	0pzx60			Q9V693 Q9v693 drosophila		11 CE CX
		Π	50	60	1 0	3	3	60	00	3	3	60	60	60	07	60	3 0	60	60	60	×
		DB	. 4	4	-	Н	Н	2	Ŋ	٦	٦	4	9	4	S	2	٦	2	2	4	
		Match Length DB	331	331	330	331	334	601	598	808	802	807	807	624	868	763	803	873	1682	216	
œ	Query	Match	9 66	99.1	9.98	63.1	49.4	30.1	29.5	26.8	26.5	26.2	26.2	26.0	26.0	25.4	25.2	25.0	24.1	23.9	
		Score	1749	1741	1520.5	1108	868	528.5	518	470.5	464.5	460.5	460.5	457	457	445.5	443	439.5	422.5	420.5	
ļ	Result	No.		7	m	4	5	9	7	80	6	10	11	12	13	14	15	16	17	18	

noines omod Migogo	homo	рошо	Q23729 cryptospori		ന	076510 cryptospori	Q20942 caenorhabdi		060407 homo sapien	Q9gz22 cryptospori		-		Q9hfx4 candida alb	Q9gz23 cryptospori	076782 cryptospori	Q9tzp9 cryptospori	018003 caenorhabdi	Q9z132 mus musculu	Q61810 mus musculu	. Q9pvw7 paralichthy	Q9w3z1 drosophila	Q9sdz6 lycopersico	Q9gz21 cryptospori	Ogjlq1 mus musculu
V10500	043384	Q9UP26	023729	Q23832	Q922E8	076510	020942	Q9W1A0	060407	Q9GZ22	027550	Q9TVV7	618160	Q9HFX4	Q9GZ23	076782	Q9TZP9	018003	092132	061810	Q9PVW7	Q9W3Z1 .	920S60	Q9GZ21	09JLQ1
-	4	4	S	Ŋ	11	Ŋ	വ	വ	4	Ŋ	Ŋ	Ŋ	Ŋ	٣	Ŋ	'n	Ŋ	S	11	Ξ	13	Ŋ	10	S	11
1536	446	1290	687	099	749	238	770	1423	543	168	123	123	765	1523	168	123	123	440	265	1253	588	738	809	168	1863
α	7.7	7.6	7.3	7.1	7.0	6.9	6.7	6.5	6.4	6.2	6.2	6.2	6.2	6.1	0.9	0.9	0.9	6.0	5.9	5.9	5.8	5.8	5.8	5.8	5.8
7 111	135	134	128	125	123.5	121.5	117.5	114	112	109	108	108	108	107.5	. 106	105	105	104.5	103	103	102.5	102.5	102.5	102	102
00	21	22	23	24	25	26	27	28	53	30	31	32	33	34	32	36	37	38	39	4 0	41	42	43	44	45

ALIGNMENTS

				0;			
RESULT 1 69ULW1 PRELIMINARY; PRT; 331 AA. AC 69ULW1; DT 01.MAY-2000 (TrEMBLrel. 13, Created) DT 01.MAY-2000 (TrEMBLrel. 13, Last sequence update) DT 01.JUN-2001 (TrEMBLrel. 17, Last annotation update) DE SPONDIN 2.			Genomics 61:5-14(1999). EMBL; AB027466; BAA85892.1; ENBL; AB027466; BAA85892.1; ENBL; PF00090; TSP1. Prosite; PS50092; TSP1; 1. SMART; SM00209; TSP1; 1. SEQUENCE 331 AA; 35772 MW; FID6F0BAC1412CA7 CRC64;	Query Match 99.6%; Score 1749; DB 4; Length 331; Best Local Similarity 99.7%; Pred. No. 6.4e-140; Matches 330; Conservative 0; Mismatches 1; Indels 0; Gaps (1 MENPSPAAALGKALCALLLATLGAAGQPLGGESICSARALAKYSITFIGKWSQTAFPKQY 60	61	1.21 HAVFSAPAVPSGTGQTSAELEVQRRHSLVSFVVRIVPSPDWFVGVDSLDLCDGDRWREQA 180
REGIO DE LA COMPANSION	SOCOS	R X X X X X X X X X X X X X X X X X X X	SO S		۷ <u>۷</u> مد	\$ 5	7.7

```
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MINDINZ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                042112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           042112
    SO DER RETANDER NOT SO DE SO D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ÓО
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ;
0
ALDLYPYDAGTDSGFTFSSPNFATIPQDTVTEITSSSPSHPANSFYYPRLKALPPIARVT 240
                                                                                         241 LVRLRQSPRAFIPPAPVLPSRDNEIVDSASVPETPLDCEVSLWSSWGLCGGHCGTKS 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           240
                                                                                                                                                            241 LVRLRQSPRAFIPPAPVLPSRDNEIVDSASVPETPLDCEVSLWSSWGLCGGHCGRLGTKS 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HEVFSAPAVPSGTGQTSAELEVQRRHSLVSFVVRIVPSPDWFVGVDSLDLCDGDRWREGA 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      241 LVRLRQSPRAFIPPAPVLPSRDNEIVDSASVPETPLDCEVSLWSSWGLCGGHCGRLGTKS 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 MENPSPAAALGKALCALLLATLGAAGQPLGGESICSARALAKYSITFTGKWSQTAFPKQY 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61 PLFRPPAQWSSLLGAAHSSDYSWWRKNQYVSNGLRDFAERGEAWALMKEIEAAGEALQSV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 121 HAVFSAPAVPSGTGQTSAELEVQRRHSLVSFVVRIVPSPDWFVGVDSLDLCDGDRWREQA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             181 ALDLYPYDAGTDSGFTFSSPNFATIPQDTVTEITSSSPSHPANSFYYPRLKALPPIARVT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181 ALDLYPYDAGTDSGFTFSSPNFATIPQDTVTEITSSSPSHPANSFYYPRLKALPPIARVT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 MENPSPAAALGKALCALLLATLGAAGQPLGGESICSARAPAKYSITFTGKWSQTAFPKQY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Primates, Catarrhini, Hominidae, Homo.
NCBI_TaxID=9606,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 99.1%; Score 1741; DB 4; Length 331; 99.1%; Pred. No. 3e-139; Live 1; Mismatches 2; Indels (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Strausberg R.; Submitted (FEB-2001) to the EMBL/GenBank/DDBJ databases. EMBL; BC002707; AAH02707.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   331 AA; 35844 MW; 418E244B893C59F4 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                               01-JUN-2001 (TrEMBLrel. 17, Created)
01-JUN-2001 (TrEMBLrel. 17, Last sequence update)
01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Created)
Last sequence update)
                                                                                                                                                                                                                                                                                                                                                                                                                         ¥.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            330 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SPONDIN 2, EXTRACELLULAR MATRIX PROTEIN. Homo sapiens (Human).
                                                                                                                                                                                                                                                                                301 RIRYVRVQPANNGSPCPELEEEAECVPDNCV 331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               301 RTRYVRVQPANNGSPCPELEEEAECVPDNCV 331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1301 RTRYVRVQPANNGSPCPELEEEAECVPDNCV 331
                                                                                                                                                                                                                                                          RTRYVRVQPANNGSPCPELEEEAECVPDNCV 331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (TrEMBLrel. 12, (TrEMBLrel. 12,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 328; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                      PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
TISSUE=CHORIOCARCINOMA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matrix protein.
SEQUENCE 331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       01-NOV-1999
01-NOV-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query' Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q9WV75
Q9WV75;
                                                                                                                                                                                                                                                                                                                                                                                                                                            ogenbe;
                                                                                                                                                                                                                                                                                                                                                                                                                    99BUD6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 3
Q9WV75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                     121
                                                                   181
                                                                                                                                                                                                                                                       301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               121
                                                                                                                                                                                                                                                                                                                                                                           RESULT
                                                                                                                                                                                                                                                                                                                                                                                                 09BUD6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         å
                                                                                                            셤
                                                                                                                                                            ò
                                                                                                                                                                                                          a
                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              E A E E
```

```
STRAIN-SPRACUE DAWLEY;
Feinstein Y., Borrell V., Garcia C., Burstyn-Cohen T., Tzarfaty V.,
Feinstein Y., Borrell V., Garcia C., Burstyn-Cohen T., Tzarfaty V.,
Frumkin A., Nose A., Okamoto H., Higashijima S., Soriano A., Klar A.;
"F-spondin and mindin: two structurally and functionally related genes expressed in the hippocampus that promote outgrowth of embryonic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       59 YPLFRPPAQWSSLLGAAHSSDYSWWRKNEYVSNGLRDFAERGEAWALMKEIEAAGEKLQS 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          120 VHAVFSAPAVPSGTGQTSAELEVQRRHSLVSFVVRIVPSPDWFVGVDSLDLCDGDRWREQ 179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         119 VHAVFSAPAVPSGTGQTSAELEVHPRHSLVSFVVRIVPSPDWFVGIDSLDLCEGGRWKEQ 178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              60 YPLFRPPAQWSSLLGAAHSSDYSMWRKNQYVSNGLRDFAERGEAWALMKEIEAAGEALQS 119
                                                                                         Craniata; Vertebrata; Euteleostomi;
Sciurognathi; Muridae; Murinae; Rattus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Brachydanio rerio (Zebrafish) (Zebra danio).
Eukaryota: Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Actinopterygii; Neopterygii; Teleostei; Euteleostei; Ostariophysi;
Cypriniformes; Cyprinidae; Rasborinae; Danio.
NCBI_TaxID-7955;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 MENPSPAAALGKALCALLLATLGA-AGQPLGGESICSARALAKYSITFTGKWSQTAFPKQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   240 TLVRLRQSPRAFIPPAPVLPSRDNEIVDSASVPETPLDCEVSLWSSWGLCGGHCGRLGTK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                86.6%; Score 1520.5; DB 11; Length 330;
86.4%; Pred. No. 1.3e-120;
iive 17; Mismatches 25; Indels 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MINDIN.
ECBCF07A0345A83A CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
Higashijima S., Nose A., Eguchi G., Hotta Y., Okamoto
Dbv. Biol. 0:0-0(1997).
EMBL; AB006085; BAA22809.1; -.
01-JUN-2001 (TrEMBLrel. 17, Last annotation update) MINDIN PRECURSOR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       042112;
01-JAN-1998 (TrEMBLrel. 05, Created)
01-JAN-1998 (TrEMBLrel. 05, Last sequence update)
01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              331 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    299 SRTRYVRVQPANNGTPCPELEEEAECAPDNCV 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        300 SRTRYVRVQPANNGSPCPELEEEAECVPDNCV 331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                   hippocampal neurons.;
Development 0:0-0(1999).
EMBL; AF155196; AAD38195.1; ..
InterPro; IPR000884; TSP1.
Pfam; PF00090; tsp_1; 1.
SMART; SM00209; TSP1; 1.
Signal.
                                                                                      Eukaryota; Métazoa; Chórdata;
Mammalia; Eutheria; Rodentia;
NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            36014 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match 86.65
Best Local Similarity 86.45
Matches 287; Conservative
                                                             Rattus norvegicus (Rat).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      330 AA;
                                                                                                                                                                                                               SEQUENCE FROM N.A.
```

ä

qq ŏ

```
MSPO PROTEIN.
                                                                                                                                                                                                                                                                                                                                           01-MAY-2000
                                                                                                                                                                                                                                                                                                                                                           01-JUN-2001
                                                                                                                                                                                                                                                                                                                09V746;
                                                                                                                                                                                                                                                                                                   09V746
                                                                                                                                                                                                                                                                         9
                                                                                                                                                                                                                                                                                                                  δ
                                                               Ω
                                                                                          δ
                                                                                                                    Пb
                                                                                                                                                 ŏ
                                                                                                                                                                         d
                                                                                                                                                                                                     ò
                                                                                                                                                                                                                               q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9
                                                                                                                       3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     67 AQWSSLLGAAHSSDYSMWRKNQYVSNGLRDFAERGEAWALMKEIEAAGEALQSVHAVFSA 126
                                                                                                                                                                                                                                                                                                                                                                         PVLPSRDNEIVDSASVP----ETPLDCEVSLWSSWGLCGGHCGRLGTKSRTRYVRVQPAN 311
                                                                                                                                                                                                     76 AHSSDYSMWRKNQYVSNGLRDFAERGEAWALMKEIEAAGEALQSVHAVFSAPAVPSGTGQ 135
                                                                                                                                                                                                                     136 TSAELEVQRRHSLVSFVVRIVPSPDWFVGVDSLDLCDGDRWREQAALDLYPYDAGTDSGF 195
                                                                                                                                                                                                                                                                                      135 ATTEFEVFARHSLLSFIVRIVPSPDWFIGVDSLNLCEGDHGKENISLELYPYDAGTDSGF 194
                                                                                                                                                                                                                                                                                                                   TESSPNFATIPQDTVTEITSSSPSHPANSFYYPRLKALPPIARVTLVRLRQSPRAFIPPA 255
                                                                                                                                                                                                                                                                                                                                   Indels 26; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                10 LGKALCALLLATLGAA----GQPLGGESICSARALAKYSITFTGKWSQTAFPKQYPLFRPP 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          12 LQQLLVVLLRFTLSCAALVNSTNGTE--CSARGPASYIVVFTGHWSPQTFPKQYPLFRPP 69
                                                                                                                       8; Gaps
                                                                                                                                                 17 LLLATL-GAAGQPLGGESICSARALAKYSITFTGKWSQTAFPKQYPLFRPPAQWSSLLGA 75
                                                                                                                                                                  Brachydanio rerio (Zebrafish) (Zebra danio).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Actinopterygii; Neopterygii; Teleostei; Euteleostei; Ostariophysi;
Cypriniformes: Cyprinidae; Rasborinae; Danio.
                                                                                                                                                                                                                                                                            Length 331;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          49.4%; Score 868; DB 13; Length 334; 49.7%; Pred. No. 1.8e-65;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Higashijima S., Nose A., Eguchi G., Hotta Y., Okamoto H.; Dev. Biol. 0:0-0(1997).

EMBL; AB006084; BAA22808.1; -. ZFIN; ZDB-GENE-990415-160; mindinl.

ZFIN; ZDB-GENE-990415-161; mindinl.
                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   334 AA; 37233 MW; 7451BF2F95AEDF05 CRC64;
                                                     36887 MW; 1D95D82B6549D273 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       01-JAN-1998 (TrEMBLrel. 05, Last sequence update) 01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
                                                                                           63.1%; Score 1108; DB 13;
61.6%; Pred. No. 9.3e-86;
iive 51; Mismatches 64;
                                                                                                                                                                                                                                                                              334 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       51; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                   312 NGSPCPELEEEAECVPDNCV 331
                                                                                                                                                                                                                                                                                                                                                                                                                                                  312 NGAPCPSLEEKRLCIPDNCV 331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01-JAN-1998 (TrEMBLrel. 05,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             InterPro; IPR000884; TSP1.
Pfam; PF00090; tsp_1; 1.
PROSITE; PS50092; TSP1; 1.
             Pfam; PF00090; tsp_1; 1.
PROSITE; PS50092; TSP1; 1.
SMART; SM00209; TSP1; 1.
SEQUENCE 331 AA; 36887 N
                                                                                                                         Matches 197; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches 166; Conservative
InterPro; IPR000884; TSP1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TSP1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Best Local Similarity
                                                                                               Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MINDINZ OR MINDINI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NCBI_TaxID=7955;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SM00209;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MINDINI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               042111;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                042111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SMART;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ഗ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
```

g

a ŏ q

ò

ò

```
RX Adams M.D., Celniker S.E., Holt R.A., Evans C.A., Gocayne J.D.,
RA Adams M.D., Celniker S.E., Holt R.A., Evans C.A., Gocayne J.D.,
RA Adams M.D., Celniker S.E., Holt R.A., Eshburner M., Henderson S.N.,
RA Annandides P.G., Scherer S.E., Li P.W., Hoskins R.A., Calle R.F.,
Gocage R.A., Lewis S.E., Richards S., Ashburner M., Henderson S.N.,
B. Sutton G.G., Wortuman J.R., Yandell M.D., Zhang O., Chen L.X.,
B. Sutton G.G., Wortuman J.R., Yandell M.D., Zhang O., Chen L.X.,
B. Abril J.F., Agbayani A., An H.-J., Andrews-Pfannkoch C., Baldwin D.,
RA Abril J.F., Agbayani A., Baxchale J., Bayraktaroglu L., Beasley E.M.,
A. Bencs P.V., Berman B.P., Bhandari D., Bolshakov S.,
B. Detchan M.R., Bouck J., Barokstein P., Borchter P.,
B. Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Burtis K.C., Busam D.A., Buller H., Cadieu E., Center A., Chandra I.,
RA Gibrity J.M., Cawley S., Dahnke C., Davenport L.B., Davies P.,
RA Cherry J.W., Expangelista C.C., Ferraz C., Ferriera S., Pleischmann W.,
RA Dodson K., Doup L.E., Downes M., Dugan-Rocha S., Dunkov B.C., Dunn P.,
RA Dodson K., Doup L.E., Garg N.S., Gelbart W.M., Glasser K.,
A. Jone R., Harvey D., Heiman T.J., Hernandez J.R., Houck J.,
RA Hostin D., Houston K.A., Howland T.J., Wei M.-H., Ibeywam C.,
RA Jalali M., Kaulush F., Karpen G.H., Re Z., Kennison J.A., Ketchum K.A.
A. Jalali M., Kaulush F., Karpen G.H., Re Z., Kennison J.M., Rese M.
A. Liu X., Mattei B., Morintosh T.C., McLeod M.P., Morpherson D.,
RA Link S.M., Nelson K.A., Howland T.C., McLeod M.P., Morphy S., Mornich S.M., Nollson D.K., Nelson D.K., Wangsarman D.A., Weinser E., Spracting T., Wolly W., Worter E., Vand A., Weiller S.M., Wong S., Yao, O. A.,
Rand R. R., Tector C., Turner R., Venter E., Wang X., Yen Williams S.M., Wolley C., Wu D., Yen R., Shirl H., Shirlin M. W., Wooder T., Shon W., Yen R., Shirlin M. W., Wesee M., Welliams S.M., Wood
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
Pterygota; Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
Ephydroidea; Drosophilidae; Drosophila.
127 PAVPSGTGQTSAELEVQRRHSLVSFVVRIVPSPDWFVGVDSLDLCDGDRWREQAALDLYP 186
                                                                                                                                                                                                                                                                                  187 YDAGTDSGFTFSSPNFATIPQDTVTEITSSSPSHPANSFYYPRLKALPPIARVTLVR--- 243
                                                                                                                                                                                                                                                                                                                                                                                                                                                 244 --LRQSPRAFIPPAPVLPSRDNEIVDSASVP----ETPLDCEVSLWSSWGLCGGHCGRLG 297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            249 LPVRQQNRL-----SNHILPDASKPHRESETPLDCEVSWMSSWGLCFGPCARGG 297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (TrEMBLrel. 13, Last sequence update) (TrEMBLrel. 17, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    298 TKSRTRYVRVQPANNGSPCPELEEEAECVPDNCV 331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                601 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Drosophila melanogaster (Fruit fly).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-MAY-2000 (TrEMBLrel. 13,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MSPO OR CG10145.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NCBI_TaxID=7227;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STRAIN-BERKELEY
```

17;

```
12;
                                                                                                                                                                                                                                                                                                     SE DDPSPVSNLNPTAS---LAT-PPATQP-APQTGCTLDRLAVXKVVLHTYWTRELFPKHYP 140
                                                                                                                                                                                                                                                                                                                                                               108 KEIEAAGE-----ALQSVHAVFS 125
                                                                                                                                                                                                                                                                                                                                                                                                                                     201 SQMQAGKSPSGGISSGTTSFNATAASTATPTGGSGGSGGSGGSGGTGTTTAERSVFDEFS 260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  126 APAVPSGTGQTSAELEVQRRHSLVSFVVRIVPSPDWFVGVDSLDLCDGDRWREQAALDLY 185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   245 RQSPRA--------FIPPAP-----VLPSRDNEIV-------DSAS 270
                                                                                                                                                                                                                                                                                                                                                  ----WALM 107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PYDAGTDSGFTFSSPNFATIPQDTVTEITSSSPSHPANSFYYPRLKALPPIARVTLVRL- 244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      381 EYELSEVFNIAEDDRKYETVQTQTHLDAEHNHVEMNNELSASIERERQTEQQQLQQNDDE 440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  441 RORIRSOLLAKMNPIYGSNNSLQPAPGQVVSVVPKNDKHAILQSIASSYRRAADASDANA 500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -----LDCEVSLWSSWGLCGGHCGRLGTKSRTR 303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               501 SKPTPSAIGGGKAGGAVGGGAATRRRSSAORRRDCRVSHWSEWTACSKSCG-VGEMHRYR 559
                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Drosophila melanogaster (Fruit fly).
Eukaryota; Metazoa; Arthropoda; Tracheata; Haxapoda; Insecta;
Pterygota; Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
Ephydroidea; Drosophilidae; Drosophila.
                                                                                                                                                                                                                                                                                2 ENPSPAAALGKALCALLLATLGAAGQPLGGESICSARALAKYSITFTGKWSQTAFPKQYP 61
                                                                                                                                                                                                                     30.1%; Score 528.5; DB 5; Length 601; 27.2%; Pred. No. 1.8e-36; tive 53; Mismatches 132; Indels 185;
                                                                                                                                                                         65434 MW; 529EEDCD348AC8EF CRC64;
                                                                                                                                                                                                                                                                                                                                            62 LFRPPAQWSSLLGAAHSSDYSMWRKNQYVSNGLRDFAERGEA-----
Created)
Last sequence update)
Last annotation update)
                                                                           InterPro: IPR002106; AA_ERNA_ligase_II.
InterPro: IPR000884; TSP1.
Pfam; PF00090; tSp_1; 1.
RMART; SM00209; TSP1; 1.
PROSITE; PS00339; AA_TRNA_LIGASE_II_2; UNKNOWN_I.
PROSITE; PS50092; TSP1; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          598 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              304 YVRVQPANNGSPCPELEEEAECVPD-NC 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         560 KVIKHGKRGGRQCPALQOSKWCGTERNC 587
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Umemiya T., Takeichi M., Nose A.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-JUL-1997 (TrEMBLrel. 04, 01-JUL-1997 (TrEMBLrel. 04, 01-JUN-2001 (TrEMBLrel. 17,
                                                                                                                                                                                                                                   Best Local Similarity 27.2 Matches 138; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRELIMINARY;
                                                                                                                                                                       601 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  271 VPETP-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NCBI_TaxID=7227;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MSPO OR CG10145.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STRAIN=CANTON
                                                                                                                                                                       SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               M-SPONDIN.
                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       002029
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT
002029
   RA
RT
RL
DR
DR
DR
DR
DR
DR
DR
                                                                                                                                                                                                                                                                                                                                                                                                                                   q
                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
```

```
86 DDPSPVPNMNPT--ASLATPPATQTAPQTG----CTLDRLAVYKVVLHTYWTRELFPKHYP 140
                                                                                                                                                                                                                                                                                                                                                                                                                                                         201 SOMQAGKSPSGGISSGTTSFNATAASTATPTGGSGGSGGSGVTGTTTAERSVFDEFSMPA 260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           129 VPSGTGQTSAELEVQRRHSLVSFVVRIVPSPDWFVGVDSLDLCDGDRWREQAALDLYPYD 188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              261 IPMGAGRSEAQVFVDSNHSLVSLMTRIVPSPDWFIGVDSFELCVGGSMIDIVTVELDPLD 320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 62 LFRPPAQWSSLLGAAHSSDYSMWRKNQYVSNGLRDFAERGEA---------WALM 107
                                                                                                                                                                                                                                                                                                                                                                                                                             -----ALQSVHAVFSAPA 128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               189 AGTDSGFTFSSPNFATIPQDTVTEITSSSPSHPANSFYYPRLKALPPIARVTLVRL---- 244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ------RQS 247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    381 LSEVFNIAEDDRKYETVQTQTHLDAEHNHVEMNNELSASIERERQTEQQQLQQNDDERQR 440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      441 IRSQLLAKMNPIYGSNNSLQAAPGQVVSVVPKNDKHAILQSIASSYRRAADASDANASKP 500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches 134; Conservative 51; Mismatches 138; Indels 182; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -----LDCEVSLWSSWGLCGGHCGRLGTKSRTRYVR 306
                                                                                                                                                                                                                                                                              2 ENPSPAAALGKALCALLLATLGAAGQPLGGESICSARALAKYSITFTGKWSQTAFPKQYP 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Brachydanio rerio (Zebrafish) (Zebra danio).
Ewkaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Actinopterygii; Neopterygii; Teleostei; Buteleostei; Ostariophysi;
Cypriniformes; Cyprinidae; Rasborinae; Danio.
                                                                                                                                                                                                                    Length 598;
            EMBL, APONOLTR, AABS8341.1; -.
FlyBase; FBgn0020269; mspo.
InterPro; IPR002016; AA_tRNA_ligase_II.
InterPro; IPR000804; TSPI.
Ffam; PF00090; tsp_1; 1.
FAM: SM00209; TSPI, 1.
PROSITE; PS00339; AA_TRNA_LIGASE_II_2; UNKNOWN_1.
PROSITE; PS0093; TSPI; 1.
SEQUENCE 598 AA; 65251 MW; 02973A52C514350D CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Higashijima S., Nose A., Eguchi G., Hotta Y., Okamoto Dev. Biol. 0:0-0(1997).
EMBL, ABO06086: BAA22810.1; -.
InferPro: IPR000884; TSP1.
InterPro: IPR002861; Reeler.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       248 PRA-------FIPPAP-----VLPSRDNEIV-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    042113;
01-JAN-1998 (TrEMBLrel. 05, Created)
01-JAN-1998 (TrEMBLrel. 05, Last sequence update)
01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
                                                                                                                                                                                                              29.5%; Score 518; DB 5; 26.5%; Pred. No. 1.4e-35;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           808 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              307 VQPANNGSPCPELEEEAECVPD-NC 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 | | | :: | : | 1 | 560 KHGKRGGRQCPALQQSKWCGTERNC 584
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRELIMINARY;
Dev. Biol. 0:0-0(0)
                                                                                                                                                                                                         Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     245 -----
                                                                                                                                                                                                                                                                                                                                                                                                                          108 KEIEAAGE--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             F-SPONDIN1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     042113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      œ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     042113
     RL
DR
DR
DR
DR
DR
SQ
                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                        ÖΛ
                                                                                                                                                                                                                                                                                                                                                                               qq
                                                                                                                                                                                                                                                                                                                                                                                                                        ŏ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                       q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   - 염
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δŽ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Op
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ŏλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Op
```

```
11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
MEDINE=99211385; PubMed=10197528;
MEDALME=99211385; PubMed=10197528;
MEDALME A., Burstyn-Cohen T., Klar A., Kalcheim C.;
Median A., Burstyn-Cohen T., Klar A., Kalcheim C.;
"F-Spondin, expressed in somite regions avoided by neural crest mediates inhibition of distinct somite domains to neural crest
                                                                                                                                                                                                                                                                                                                                                                                176 SLTKRMC------EKESLYGETTDKPLLDCCACGTAKYRVTFYGNWSEKLHPKDYP- 225
                                                                                                                                                                                                                                                                                 63 FRPPAQWSSLIGAAHSSDYSMWRKNQYVSNGLRDFAERGEAWALMKEIEAAGEALQSVHA 122
                                                                                                                                                                                                                                                                                                    226 -RRANHWSALIGASHSKNYILWEYGGYASEGVKQVAELGSPVKMEEEIRQKGDEVLTVIK 284
                                                                                                                                                                                                                                                                                                                                                        123 V------FSAPAVPSGTGQTSAELEVQRRHSLVSFVVRIVPSPDWFVGVDSLDLCDG 173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              397 ITPVARLVVERIARKGEQCNIVPDNV----DDIVADIAQEEKEEDDTPETCIYSNWSPWS 452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
MEDLINE-99325518; Pubmed-10399931;
Burstyn-Cohen T., Tzarfaty V., Frumkin A., Feinstein Y., Stoeckli E.,
                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Klar A.; "F-spondin is required for accurate pathfinding of commissural axons
                                                                                                                                                                                                           9 ALGKALCALLLATLGAAGQPLGGESI-----CSARALAKYSITFTGKWSQTAFPKQYPL 62
                                                                                                                                                                                                                                                                                                                                                                                                                                                     339 ECGWVQKVVQDLIPWDAGTDSGVSYESPNKSTAPQEKIRPLTSL--DHPQSPFYDPEGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          233 LPPIARVTLVRL-RÖSPRAFIPPAPVLPSRDNEIVDSA----SVPETPLDCEVSLWSSWG
                                                                                                                                                                                                                                                                                                                                                                                                                                174 D-RWREQAALDLYPYDAGTDSGFTFSSPNFATIPQDTVTEITSSSPSHPANSFYYPRLKA
                                                                                                                                 DB 13; Length 808;
                                                                                                                                                                    Indels
                                                                           0A24154AA4A89EC7 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     288 LCGGHCGRLGTKSRTRYVRVQPANNGSPCPELEEEAECVPDNC 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           453 ACSSSTCEKGKRMRQRMLKAQ-LDLSVPCPHTQDFEPCIGPGC 494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Last sequence update)
Last annotation update)
                                                                                                                               26.8%; Score 470.5; DB 13; 33.2%; Pred. No. 2.1e-31; vative 52; Mismatches 132;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   802 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRT;
Pfam; PF00090; tsp_1; 6.
Pfam; PF02014; Reeler; 1.
PROSITE; PS50092; TSP1; 6.
SMART; SM00209; TSP1; 6.
SEQUENCE 808 AA; 90645 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   at the floor plate.";
Neuron 23:233-246(1999).
EMBL; AF14930.2, ADAL1495.1, -.
InterPro; IPR000884; TSP1.
InterPro; IPR002861; Reeler.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      01-NOV-1999 (TrEMBLrel. 12, 01-JUN-2001 (TrEMBLrel. 17, F-SPONDIN PRECURSOR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-NOV-1999 (TrEMBLrel. 12,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pfam; PF00090; tsp.1; 6.
Pfam; PF02014; Reeler; 1.
PROSITE; PS50092; TSP1; 5.
SMART; SM00209; TSP1; 6.
                                                                                                                                                                    Matches 114; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Neuron 22:475-488(1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gallus gallus (Chicken)
                                                                                                                                               Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NCBI_TaxID=9031;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         migration.
                                                                                                                                 Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q9W770
Q9W770;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Signal.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DR DR DR SO SO
                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SSSEPPPR
```

```
10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             11;
                                                                                                                                                                                                                                                                                                                                                    1.85 YPYDAGTDSGFTFSSPNFATIPQDTVTEITSSSPSHPANSFYYPRLKALPPIARVTLVRL 244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       245 RQSPRA--FIPP-----APVLPSRDNEIVDSASVPETPLDCEVSLWSSWGLCGGHCGRL 296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              404 ARKGEQCNFVPDNIDDIVADLAPEEKEE-----DDTPETCIYSNWSPWSACSSSTCEK 456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               176 SLIKKLCEQDSTFDGVTDKPI --- LDCCACGTAKYRLTFYGNWSEKTHPKDYP--RRANH 230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           59 WSSLLGAAHSSDYSMWRKNQYVSNGLRDFAERGEAWALMKEI-EAAGEALQSVHAVFSAP 127
                                                                                                                                                                                                                                                                                                                                                                                                                                                      69 WSSLLGAAHSSDYSMWRKNQYVSNGLRDFAERGEAWALMKEI-EAAGEALQSVHAVFSAP 127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            128 AVP--SGTGQTSAELEVQRRHSLVSFVVRIVPSPDWFVGVDSLDLCDGD-RWREQAALDL 184
                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                            9 ALGKALCALLLATLGAAGQPLGGESICSARALAKYSITFTGKWSQTAFPKQYPLFRPPAQ 68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9 ALGKALCALLLATLGAAGQPLGGESICSARALAKYSITFTGKWSQTAFPKQYPLFRPPAQ 68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.

Mityancto K., Morishita Y., Yamazaki M., Minamino N., Kangawa K., Mityauch T., Yamada K., Minegishi T.;

Mityauch H., Mitutani T., Yamada K., Minegishi T.;

"Isolation and characterization of vascular smooth muscle cell gr promoting factor from bovine ovarian follicular fluid, and its cloning from bovine and human ovary.";

Submitted (NOV-2000) to the EMBL/GenBank/DDBJ databases.

EMBL: ABOSI390; BAB18461.1;

InterPro; IPR000884; Reeler.
                                                                                                                                                                                                                                           27;
                                                                                                                                                                          Length 802;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 807;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match 26.2%; Score 460.5; DB 4; Length Best Local Similarity 34.5%; Pred. No. 1.5e-30; Matches 115; Conservative 50; Mismatches 143; Indels
                                                                                                                                                                   26.5%; Score 464.5; DB 13; Length
33.2%; Pred. No. 6.8e-31;
Live 52; Mismatches 144; Indels
                                    F-SPONDIN.
0644D2BDD0A0FE12 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              550092; TSP1; 5.
807 AA; 90987 MW; 06FC52484206BB55 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (TrEMBLrel. 16, Last sequence update) (TrEMBLrel. 17, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  807 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      297 GTKSRTRYVRVQPANNGSPCPELEEEAECVPDNC 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRT;
20 PC
802 F-
90509 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-MAR-2001 (TrEMBLrel. 16, 01-MAR-2001 (TrEMBLrel. 16, 01-JUN-2001 (TrEMBLrel. 17, VSGP/F-SPONDIN.
                                                                                                                                                                                                                                    Matches 111; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pfam; PF02014; Reeler; 1.
Pfam; PF00090; tsp_1; 6.
SMART; SM00209; TSP1; 6.
PROSITE; PS50092; TSP1; 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens (Human)
   1
21 8
802 AA;
                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NCBI_TaxID=9606;
                                CHAIN
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE
                                                                                                                                                                          Query Match
Best Local
       SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  09HCB6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     09HCB6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ζ
   FT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ă
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ŏλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A PACA A 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                      άý
```

```
409 ARKGEOCNIVPDNV----DDIVADLA--PEEKDEDDTPETCIYSNWSPWSACSSSTCDKG 462
                                                        298 TKSRTRYVRVQPANNGSPCPELEEEAECVPDNC 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TISSUE=BRAIN;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                  KIAA0762.
                                                                                                                                                                                                                                                                           094862;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NON_TER
                                                                                                                                                                                                                                                 094862
                                                                                                                                                                                            RESULT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 13
                                                                                                                                                                                                                     094862
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   076822
                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AC PC
                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                pp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Miyamoto K., Morishita Y., Yamazaki M., Minamino N., Kangawa K., Matsuo H., Mizutani T., Yamada K., Minegishi T.;
"Isolation and characterization of vascular smooth muscle cell growth promoting factor from bovine ovarian follicular fluid, and its cDNA cloning from bovine and human ovary.";
Submitted (Nov-2000) to the EMBL/GenBank/DDBJ databases.
EMBL; AB051389; BAB18460.1;
InterPro; IPR000884; TSPI.
185 YPYDAGTDSGFTFSSPNFATIPQDTVTEITSSSPSHPANSFYYPRLKALPPIARVTLVRL 244
                                                                                                                                                                                                                                                                                                 245 -RQSPRAFIPPAPVLPSRDNEIVDSASVPE-----TPLDCEVSLWSSWGLCGGHCGRLG 297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     128 AVP--SGTGQTSAELEVQRRHSLVSFVVRIVPSPDWFVGVDSLDLCDGD-RWREQAALDL 184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           69 WSSLLGAAHSSDYSMWRKNQYVSNGLRDFAERGEAWALMKEI-EAAGEALQSVHAVFSAP 127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   128 AVP - SGTGQTSAELEVQRRHSLVSFVVRIVPSPDWFVGVDSLDLCDGD-RWREQAALDL 184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        291 AWQPLNVRAAPSAEFSVDRTRHLMSFLTMMGPSPDWNVGLSAEDLCTKECGWVQKVVQDL 350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           185 YPYDAGTDSGFTFSSPNFATIPQDTVTEITSSSPSHPANSFYYPRLKALPPIARVTLVRL 244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   245 -RQSPRAFIPPAPVLPSRDNEIVDSASVPE-----TPLDCEVSLWSSWGLCGGHCGRLG 297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9 ALGKALCALLLATLGAAGQPLGGESICSARALAKYSITFTGKWSQTAFPKQYPLFRPPAQ 68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Eukaryota, Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
Bovidae; Bovinae; Bos.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        26.2%; Score 460.5; DB 6; Length 807; 34.5%; Pred. No. 1.5e-30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                50; Mismatches 143; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Promise Process of Pro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      01-MAR-2001 (TrEMBLrel. 16, Created)
01-MAR-2001 (TrEMBLrel. 16, Last sequence update)
01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
VSGP/F-SPONDIN.
                                                                                                                                                                                                                                                                                                                                                                                                            298 TKSRTRYVRVQPANNGSPCPELEEEAECVPDNC 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                    463 KRMRQRMLKAQ-LDLSVPCPDTQDFQPFQRGPGC 494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  =
-
-
::
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches 115; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Bos taurus (Bovine).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NCBI_TaxID=9913;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                      à
                                                                                                                                                                                                                                         a
                                                                                                                                                                                                                                                                                                 ð
                                                                                                                                                                                                                                                                                                                                                    Op
                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
```

```
10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDLINE=99087487; PubMed=9872452;
Nagase T., Ishikawa K., Suyama M., Kikuno R., Miyajima N., Tanaka A.,
Kotani H., Nomura N., Ohara O.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        74 KQVAELGSPVKMEEEIRQQSDEVLTVIKAKAQWPAWQPLNVRAAPSAEFSVDRTRHLMSF 133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      152 VVRIVPSPDWFVGVDSLDLCDGD-RWREQAALDLYPYDAGTDSGFTFSSPNFATIPQDTV 210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  211 TEITSSSPSHPANSFYYPRLKALPPIARVTLVRL-RQSPRAFIPPAPVLPSRDNEIVDSA 269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  270 SVPE-----TPLDCEVSLWSSWGLCGGHCGRLGTKSRTRYVRVQPANNGSPCPELEEEA 323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RDFAERGEAWALMKEI-EAAGEALQSVHAVFSAPAVP--SGTGQTSAELEVQRRHSLVSF 151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       16 CCACGTAKYRLTFYGNWSEKTHPKDYP - - RRANHWSAIIGGSHSKNYVLWEYGGYASEGV 73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           35 CSARALAKYSITFTGKWSQTAFPKQYPLFRPPAQWSSLLGAAHSSDYSMWRKNQYVSNGL 94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         "prediction of the coding sequences of unidentified human genes. XI. The complete sequences of 100 new cDNA clones from brain which code
                                                                                                                                                                                                                                                                                                                                                                                                              Homo sapiens (Human).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ouery Match 26.0%; Score 457; DB 4; Length 624 Best Local Similarity 35.5%; Pred. No. 2.1e-30; Matches 109; Conservative 47; Mismatches 129; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 624 AA; 70557 MW; 40F2238D29024D03 CRC64;
                                                                                                                                                                                                                                             01-MAY-1999 (TrEMBLrel. 10, Created)
01-MAY-1999 (TrEMBLrel. 10, Last sequence update)
01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    898 AA.
076822 PRELIMINARY; PRT;
076822;
01-NOV-1998 (TrEMBLrel. 08, Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    The complete sequences of 100 nee for large proteins in vitro."; DNA Res. 5.277-286(1998).
EMBL, AB018055; BAA34482.1; Interpro; IPR000884; TSP1. Pfam; PF00090; tSP1; 6.
PROSITE; PS50092; TSP1; 5.
SMART; SM00209; TSP1; 6.
                                                                                                                                                                                                                                                                                                                                                     KIAA0762 PROTEIN (FRAGMENT)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          324 ECVPDNC 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       305 PCMGPGC 311
```

```
10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   : ||| | :||: :| | | :||: || 365 IRPITSQDPKNPASPWYSARGKSFPPVARIVIERTGIMDNGCHGKTSRDDEEDIDIFSEE 424
                                                                                                                                                                                                                                                                                                                                                                                                      189 CTACGAGKYRMTFYGLWSQQTHPKDYPKY--GTHWSAIIGATHSKDYTIWEYGGYSTEGV 246
                                                                                                                                                                                                                                                                                                                                                                                                                           95 RDFAERGEAWALMKEIEAAGEALQSVHAVFSAPAVPSG-----TGQTSAELEVQRRHSLV 149
                                                                                                                                                                                                                                                                                                                                                                                                                                         425 ISLSKAEKKERKRNKDRNRGRDKGRDRHGHDHDGSHKLTKGDLTISMGTMAVNSTAVK 484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    485 IWWAPPSNVHSSILGYLVYYQEGQKLLGPNVLEIPDGETTQIVLGGLEPESPYTIRVVAY 544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -----LDCEVSLWSSWGLCGGHCGRLGTKSRTRYVRVQPAN 311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    545 TMEQSNIQSEPAMVTTLPDTSIVDVPCLYSPWSEWSDCSVQCGK-GVRKRNKVLKSLP-- 601
                                                                                                                                                                                                                                                                                                                                          h Similarity 25.9%; Score 457; DB 5; Length 898; Similarity 25.9%; Pred. No. 3.4e-30; 13; Conservative 55; Mismatches 115; Indels 154; Gaps
                                                                                                                                                                                                                                                                                                                                                                                  "35 CSARALAKYSITFTGKWSQTAFPKQYPLFRPPAQWSSLLGAAHSSDYSMWRKNQYVSNGL 94
                                                                                                                  Characterisation of AmphiF-spondin reveals the modular evolution of
                                  Branchiostoma floridae (Florida lancelet) (Amphioxus).
Eukaryota: Metazoa; Chordata; Cephalochordata; Branchiostomidae;
Branchiostoma.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ----RDNEIVDSASVPETP--
                                                                                                                            chordate F-spondin genes.";
Submitted (MAY-1998) to the EMBL/GenBank/DDBJ databases.
EMBL; AJ006096; CAA06854 1;
InterPro; IPR002048; EF-hand.
                                                                                                                                                                                                                                                                                                    Repeat.
SEQUENCE 898 AA; 100418 MW; E1DE840C7B9C266A CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               210 VTEITSSSPSHPANSFYYPRLKALPPIARVTLVRL------
  01-NOV-1998 (TrEMBLrel. 08, Last sequence update) 01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              763 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRINTS; PRO0014; FNTYPEIII.
SMART; SMO0166; FN3; 2.
SMART; SMO0209; TSP1; 3.
PROSITE; PS00018; EF_HAND; UNKNOWN_1.
PROSITE; PS50092; TSP1; 3.
                                                                                                                                                                    Interpro; IPR003962; FNIII_repeat.
Interpro; IPR003961; FN_III.
Interpro; IPR003661; FN_III.
Interpro; IPR000884; TSP1.
Pfam; PF00041; fn3, 2.
Pfam; PF002014; Reeler; 1.
Pfam; PF00090; tsp_1; 3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      312 NGSP--CPELEEEAECV 326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          602 --SPMCTDELEQTEQCM 616
                                                                                                                                                                                                                                                                                                                                                                Matches 113; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRELIMINARY;
 01-NOV-1998 (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  251 --FIPPAPVLPS-----
                                                                                               SEQUENCE FROM N.A.
                                                                          NCBI_TaxID=7739;
                                                                                                          Shimeld S.M.;
                       F-SPONDIN.
                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                       Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         09XZD0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               09xzd0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    O9xzd0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A D
                                                                                                                                                                                                                           SOR DR KW
                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             QΩ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
```

```
RC STRAIN-BERKELEY.

RAMIN-BERKELEY.

RAMIN-BERKELEY.

RAMIN-BERKELEY.

RA Adman A. Celniker S.E., Li P.W., Favans C.A., Gocayne J.D.,

RA Adman M.D., Celniker S.E., Li P.W., Favans C.A., Gocayne J.D.,

RA Adman M.D., Celniker S.E., Li P.W., Favans C.A., Gocayne J.D.,

RA Adman M.D., Celniker S.E., Richards S., Ashburner M., Henderson S.N.,

Sutton G.G., Wortman J.R., Pandell M.D., Zhang Q., Chan L.X.,

RA Bardon R.C., Rodges Y.-H.C., Blazel R.G., Change M., Miklos G.L.G.,

RA Admin J.F., Doyle C., Barter E.G., Helt G., Nalson C.R., Miklos G.L.G.,

RA Ballew R.M., Basu A., An H.-J., Andrews-Pennatchof, C., Baldwin D.,

RA Ballew R.M., Basu A., Barendale J., Baytaktaroglu L., Beasley E.M.,

Rablew R.M., Basu A., Barendale J., Baytaktaroglu L., Beasley E.M.,

Rablew R.M., Gawley S., Dahlke C., Davenport L.B., Davies P.M.,

RA Burtis R.C., Busam D.A., Buller H., Caddeu E., Center A., Chandra I.,

RA Burtis R.C., Busam D.A., Baller H., Caddeu E., Center A., Chandra I.,

RA Durbin R.J., Evangelista C.C., Ferraz C., Ferriers S., Ploukov B.C., Dunn P.,

RA Durbin R.J., Beyngelista C.C., Ferraz C., Ferriers S., Ploukov B.C., Dunn P.,

RA Hartis N.L., Harvey D., Helman T.J., Hernandez J.R., Rotck J.,

RA Hartis N.L., Harvey D., Helman T.J., Hernandez J.R., Rotck J.,

RA Jalai M., Kalush F., Karpen G.H., Ke Z., Kulp D., May M., Martol B., Mortel B., Mirthen G.Y., Nikon K., Supeler F., Smith T.,

Spier E., Spradiling A.C., Stapleton M., Stupel K., Sun E.,

RA J., Zhong X.H., Zhong W., Zhon X., Zhu X., Smith H.,

Rabon D.R., Wassarman D.A., Weissenbach J.,

Rabon S.M., Woodage T., Worley K.C., Wu D., Yang G., Zhoo Q., Zhoo Q.,

Rabon S.M., Woodage T., Worley K.C., Wu D., Yang G., Sien R.,

Rabon S.M., Wers E. W
                                                                                                                                                                                  Drosophila melanogaster (Fruit fly).
Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
Pterygota; Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
Ephydroidea; Drosophilidae; Drosophila.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Darocha S., Baumgartner S.;
"Fat-Spondin, a Drosophila member of the Spondin family, is highly expressed in fat body and hemocytes.";
Submitted (MAR-1999) to the EMBL/GenBank/DDBJ databases.
-!- SIMILARITY: TO PANTERFIC TRYPSIN INHIBITOR (KUNITZ) DOMAIN.
EMBL; AE003804; AAF57910.1; -.
                                 (TrEMBLrel. 12, Last sequence update) (TrEMBLrel. 17, Last annotation update)
Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FlyBase; FBgn0026721; fat-spondin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  InterPro; IPR002223; Kunitz_BPTI.
InterPro; IPR002861; Reeler.
InterPro; IPR000884; TSP1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EMBL; AF135119; AAD31715.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Pfam; PF00014; Kunitz_BPTI; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pfam; PF00090; tsp_1; 4.
PRINTS; PR00759; BASICPTASE.
SMART; SM00131; KU; 1.
SMART; SM00209; TSP1; 4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pfam; PF02014; Reeler; 1.
                                                                                                                                                        FAT-SPONDIN OR CG6953.
                                                                                                                  FAT-SPONDIN PROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          HSSP; P00974; 1BII.
                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STRAIN-OREGON-R;
                                                                                                                                                                                                                                                                                                                                                                NCBI_TaxID=7227;
01-NOV-1999
01-NOV-1999
                                                                                01-JUN-2001
```

```
6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               10;
                                                                                                                                                                                                                                                                                      122 AVFSAPAV--PSGTGQTSAELEVQRRHSLVSFVVRIVPSPDWFVGVDSLDLCDGD-RWRE 178
                                                                                                                                                                                                                                                                                                                                                              270 -LIKAAGLWYPNVVONTSSKFRVDRKHPKVSLVSMFGPSPDWVVGISGLDLCTEDCSWKE 328
                                                                                                                                                                                                                                                                                                                                                                                                        179 QAALDLYPYDAGTDSGFTFSSPNFATIPQDTVTEITSSSPSHPANSFYYPRLKALPPIAR 238
                                                                                                                                                                                                                                                                                                                                                                                                                            62 LFRPPAQWSSLLGAAHSSDYSMWRKNQYVSNGLRDFAERGEAWALMKEIEAAGEALQSVH 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            239 VTLVR----LRQSPRAFIPPAPVLPSRDNEIVDSASVPETPLDCEVSLWSSWGLCGGHCG 294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       389 LYLRREKIVSRNCDDEF-----LQALQLEVSDDAEEQDTRAECRVGDYSAWSPCSVSCG 442
                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2 ENPSPAAALGKALCALLLATLGAAGQPLGGESICSARALAKYSITFTGKWSQTAFPKQYP 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           35 CSARALAKYSITFTGKWSQTAFPKQYPLFRPPAQWSSLLGAAHSSDYSMWRKNQYVSNGL 94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           F-SPONDINZ.
Brachydanlo rerio (Zebrafish) (Zebra danio).
Brachydanlo rerio (Zebrafish) (Zebra danio).
Brachydanlo rerio (Zebrafish) (Zebra danio).
Actinopterygii; Neopterygii; Teleostei; Buteleostei; Ostariophysi; Cypriniformes; Cyprinidae; Rasborinae; Danio.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           78;
                                                                                                                              DB 5; Length 763;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match 25.2%; Score 443; DB 13; Length 803; Best Local Similarity 30.6%; Pred. No. 4.5e-29; Matches 113; Conservative 47; Mismatches 131; Indels 70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
Higashijima S., Nose A., Eguchi G., Hotta Y., Okamoto H.;
Dev. Biol. 0:0-0(1997).
EMBL; AB006087; BAA22811.1;
                                                                                                                                                                   Indels
                                                     Serine protease inhibitor.
SEQUENCE 763 Aa; 84945 MW; 3292DEDD2CFE4DAB CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     619C8F54B40DC158 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          01-JAN-1998 (TrEMBLrel. 05, Last sequence update)
01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
                                                                                                                         Query Match 25.4%; Score 445.5; DB 5; Best Local Similarity 33.3%; Pred. No. 2.6e-29; Matches 111; Conservative 45; Mismatches 138;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                803 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   295 RLGTKSRTR-YVRVQPANNGSPCPELEEEAECV 326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      01-JAN-1998 (TrEMBLrel. 05, Created)
01-JAN-1998 (TrEMBLrel. 05, Last seq
PROSITE; PS00280; BPTL_KUNITZ_1; 1. PROSITE; PS50279; BPTL_KUNITZ_2; 1. PROSITE; PS50092; TSP1; 4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  803 AA; 90331 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        InterPro; IPR000762; PTN_MK.
InterPro; IPR000884; TSP1.
InterPro; IPR002861; Reeler.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pfam; PF00090; tsp_1; 6. Pfam; PF02014; Reeler; 1. PROSITE; PS50092; TSP1; 6.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SMART; SM00193; PTN; 1.
SMART; SM00209; TSP1; 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       042114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 15
042114
 DR DR SO
                                                                                                                                                                                                                                                                    ŏ
                                                                                                                                                                                                                                                                                                     q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          õ
```

```
152 VVRIVPSPDWFVGVDSLDLCDGD-RWREQAALDLYPYDAGTDSGFTFSSPNFATIPQDTV 210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      : :|| | : :|| | : :|| | : :|| | : :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| :|| | :|| | :|| | :|| | :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| 
                                                                                                                                                                                                                                                                                                                                                                                               EEGDNTPETCIYSNWSPWSACSSTCDKGRRMRQRMLKAQLDPNLPCLHTQDFEPCMGPG 489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     270 SVPETPLDCEVSLWSSWGLCGGHCGRLGTKSRTRYVRVQPANNGSPCPELEEEAE---- 324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RDFAERGEAWALMKEIEAAGEALQSV---HAVFSAPAVPSGTGQTSAELEVQRRHSLVSF 151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              211 TEITSSSPSHPANSFYYPRLKALPPIARVTLVRLRQ----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      247 ----SPRAFI-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -- CVPDNCV 331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    548 DDCSPSSCV 556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    325
                                                                                                       ag.
                                                                                                                                                                                                                                                                                                               δý
                                                                                                                                                                                                                                                                                                                                                                                                                                                               qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      òγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             qc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
```

Search completed: December 10, 2001, 20:02:39 Job time: 2891 sec

```
December 10, 2001, 13:37:26 ; Search time 1640.62 Seconds (without alignments) 11111.277 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 egetgetectgeegggtgat......tgeaggeggeegagggeaca 1105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2944280
GenCore version 4.5 Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         otal number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1472140 seqs, 8248589755 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                             OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            IDENTITY_NUC Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             em_vi: *
em_htgo_hum: *
em_htgo_inv: *
em_htgo_rod: *
em_htg_hum: *
em_htg_hum: *
em_htg_hum: *
em_htg_loid: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   himum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-09-170-042A-1
1105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GenEmbl:*

1: gb_ba:*
2: gb_htg:*
3: gb_on:*
3: gb_on:*
3: gb_ph:*
3: gb_ph:*
3: gb_ph:*
3: gb_ph:*
3: gb_ro:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      em_pat:*
em_ph:*
em_pl:*
em_co:*
em_sts:*
em_sy:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   em_in:*
em_om:*
em_or:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 em_ov:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        em_un:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   10.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
1111.
111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Searched:
                                                                                                                                                                                                                                                                                                 Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ٠,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6
```

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

OKIGIN

Res	Result No. S	core	Query Match	Length	DB	QI :	Des	script	ion
		110	00	1105		AR035961	AI	AR035961	nence
	2 10	98.6	4.66	1634	σ,	BC002707	Ĭ,	BC002707	mo sa
	⊣	84. F		1807	(ABU27466	A.	B02/466	mo sapi
		0 0		2552	>	AFISSISO	7 .	AF133190	attus
		7 C		700		AB00000	¥ ×	8000000	T OTH
		 		7		ARU3/0/4	2 2	RUS/6/4	daeno
Ç	, ca	, 4		107176		05757V	2	0525210	sequence
)		30		١ .		AR035966	Ā	R035966	
	10	^		4292		AK024499	Ā	K024499	es ou
	1.1 2	77.		2820		AK026054	¥	K026054	ES OF
	~	25		3381		AB006084 ·	A	B006084	nio re
	,-r-	02.		316		AR035967	Y.	R035967	duen
	14 2	02.		316		AR035968	Ai	AR035968 Se	quenc
	2	18.		2565		DMAF000178	Ai	F000178	Drosophi1
	9	10.		3489		BFL6096	A.	300000	Branchios
	17	0		2466		AF135119	AI	F135119	osophi
	18			3146		AB006086	AI	B006086	r.
	19	78	•	4061		AB051389	AI	B051389	s ta
	20	78		4061		E32471	H	32471 No	-
ပ	21	75		51289		AC005717	A(C005717	Drosophil
υ	22	75		_		AC020007	A	C020007	Drosophil
	23	^		259817		AE003804	AI	E003804	Drosophil
	24	•		3079		AX093366	A)	398860x	Sequence
	25			3079		E32470	ш́	32470 No	vel vascu
	26			3079		AB051390	AI	B051390	s om
	27			3999		AX093359	A)	X093359	Sequence
	28			3999		AB01.8305	AI	B018305	mo sap
O	29	9.07		76217		AC020385	AC	0020385	Drosophil
O	30			9		AC007580	AC	0007580	osophi
υ	31			258778		AE003813	AI	E003813	osophi
	32	^				AR007441	AI	R007441	Sequence
	33	70		4029		E32472	H	32472 No	vel vascu
	34	70		4029	0	RATFSAA	-	M88469 R	attus norv
ပ	35	9	•	20293		SCD20	AI	L392148	Streptomy
U	36	65.4		10805		AC017707	AC	C017707	7 Drosophil
	3.7			184621		AC007440	AC	C007440	Drosophil
	38			O		AE003822	Ai	E003822	Drosophil
	39			3226		AF149302	A	F149302	Gallus ga
	40			3226		AR007442	AI	R007442	daence
	4.1			L)		AP000816	Ai	P000816	yza sa
	42			161266		AP001278	A	P001278	yza sa
U	43			Ξ		AE005853	AI	E005853	ulobac
	44	8.09		167761	7	0322	AI	P003221	Oryza sat
	45	09		3576	Ŋ	B00008	AI	B006087	nio re
						ALIGNMENTS			
RES	RESULT 1								
ARC	ARUSSYBL				-			(•
DEFIN	LOCUS DEFINITION		Sequence	1 from p	oaten	DNA 1 115 5871969	PAT	73 - SEP	- TAAA
ACC	ESSION				3				1
VER	VERSION	AR0		1 GI:59	5262	6			
KEX	KEYWORDS								
SOC	URCE		Unknown.						
ر	Ų.		Unknown. Unclassif	نامز					
REF	ERENCE		(bases	1 to 11	05)				
Æ,	AUTHORS		tings,	3. and D	Dillo	P.J.			
Ε,	TTLE		Nucleic a	cids enc	odin	d human neuronal	attachment	factor-	
FEA	FEATURES			s Je/190 Location	/0ua	io-res fiers			
	Sourc	ō,		1, 1105					
í				/organis	n₌u	nown"			
BASE	SE COUNT		178 a	393	O	362 g 172 t			

```
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61 tgcgctctcctcctggccactctcggcgccgccggccagcctcttgggggagagtccatc 120
                                                                                                                                                   300
                                                                                                                                                                                                                                                                                                                          480
                                                                                                                                                                                                                                                                                                                                                                                                                     900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cccatcgccagggtgacactggtgcggctgcgacagagccccagggccttcatccctcc 780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             901 aggetegggaeceaagageaggaetegetaegteegggteeageeegeeaaeaaegggage 960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           goottocccaagcagtaccccctgttccgccccctgcccagtggtcttcgctgctggggg 240
                                                                                                                                                                                                                                 241 geegegeatageteegaetacageatgtggaggaagaaceagtaegteagtaaegggetg 300
                                                                                                                                                                                                                                                                               cycyactttycygaycycygycyayycctyyyycyctyatyaayyayatcyayycyyyyy 360
                                                                                                                                                                                                                                                                                                     360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           tectecteteceagecaceeggecaactectetactaceegggetgaaggeeetgeet 720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61 rGCGCTCTCCTCCTCCTGGCCACTCTCGGCGCCCCCCCAGCCCTCTTGGGGGAGAGTCCATC 120
                         Gaps
                                               1 egetgeteetgeegggtgaatggaaaaccecageeeggeegeeetggggeaaggeeete 60
                                                                   1 CGCTGCTCCTGCCGGGTGATGGAAACCCCAGCCGGCCGCCGCCCTGGGCAAGGCCCTC 60
                                                                                                                                                                                                                                                                                          241 GCCGCGCATAGCTCCGACTACAGCATGTGGAGGAAGAACCAGTACGTCAGTAACGGGCTG
                                                                                                                                                                                                                                                                                                                                                                                               421 CAGACGTCGGCGGAGCTGGAGGTGCAGGCAGGCACTCGCTGGTTGTTGTGTGCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   cgttggcgggaacaggcggcgctggacctgtacccctacgacgccgggacagcggc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               treacettetectececeaaettegecaceatecegeaggacaeggtgacegagataaeg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ccgctggactgcgaggtctccctgtggtcgtcctgggggactgtgcggaggccactgtggg
                                                                                                                                          tgttccgccagagccctggccaaatacagcatcaccttcacgggcaagtggagccagacg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    geceeagtectgeccageaggaeaatgagattgtagaeagegeetceagttecagaaacg
                        ;
  Length 1105;
                         Indels
100.0%; Score 1105; DB 6;
100.0%; Pred. No. 2.2e-150;
ive 0; Mismatches 0;
                      0; Mismatches
                        Conservative
             Similarity
                      Matches 1105;
  Query Match
             Best Local
                                                                                                                                                                                                                                                                               301
                                                                                                                                                                                                                                                                                                     301
                                                                                                                                                                                                                                                                                                                                                                         421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  841
                                                                                                                                                                                      181
                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 961
                                                                                                                 q
                                                                                                                                                              g
                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                   q
                                                                                                                                                                                                                                                                                                                                                q
                                                                                                                                                                                                                                                                                                                                                                                            qq
                                                                                                                                                                                                                                                                                                                                                                                                                                     Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      q
                                                                                            ò
                                                                                                                                        ò
                                                                                                                                                                                                                                  õ
                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                          ð
                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
```

```
/procein_id="AAH02707.1"
//brocein_id="AAH02707.1"
//brocein_id="AAH02707.1"
//translation="WebPsparalckalchallatidaagoplogesicsarapakvs
ITFTGKWSQTAFPKQYPLFRPPAQWSSLGAAHSSDVSWWRKNQYVSNGLRDFAREROF
MAMAMKEIERAGEALGSVHEVFSAPAVPSGTGGTSAELEVORREJVSPSPD
WFWQVDSLDLCDGGDBWREQAALLYPVDAGTTGGFFFSSPRFATIPODTVTEITSSSP
SHPANSFYYPRIKALPPIARVTLLRLRQSPRAFIPPAPVLPSRDNEIVDSASVPETPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at: http://image.llnl.gov Series: IRAL Plate: 12 Row: a Column: 16 This clone was selected for full length sequencing because it passed the following selection criteria: matched mRNA gi: 6912681.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Direct Submission
Submitted (05-FEB-2001) National Institutes of Health, Mammalian
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gene Collection (MGC), Cancer Genomics Office, National Cancer
Institute, 31 Center Drive, Room 11A03, Bethesda, MD 20892-2590,
1021 agccccgcagcccctggggccccccggagccatggggtgtcggggggctcctgtgcaggct 1080
                                              1021 AGCCCCGCAGCCCCTGGGGCCCCCCGGAGCCATGGGGTGTCGGGGGCTCCTGTGCAGGCT 1080
                                                                                                                                                                                                                                                                                                               Homo sapiens, spondin 2, extracellular matrix protein, clone MGC:3472 IMAGE:3630467, mRNA, complete cds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cDNA Library Preparation: Rubin Laboratory cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL) MAN Sequencing by: National Institutes of Health Intramural Sequencing Center (NISC), Gaithersburg, Maryland;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /product="spondin 2, extracellular matrix protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Eutele
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 1634)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /tissue_type="Placenta, choriocarcinoma"
/clone_lib="NIH_MGC_21"
/lab_host="DH10B-R"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NIH-MGC Project URL: http://mgc.nci.nih.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /db_xref="taxon:9606"
/clone="MGC:3472 IMAGE:3630467"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Location/Qualifiers
1. .1634
/organism="Homo sapiens"
//db_xref="LocusID:10417"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note="Vector: pOTB7"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Email: cgapbs-r@mail.nih.gov
Tissue Procurement: ATCC
                                                                                                      1081 catgctgcaggcggccgagggcaca 1105
                                                                                                                                 1081 CATGCTGCAGGCGGCCGAGGGCACA 1105
                                                                                                                                                                                                                                                                                            mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Zhang, L.-H. and Green, E.D.
                                                                                                                                                                                                                                                                                                                                                                                               BC002707.1 GI:12803740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Contact: MGC help desk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .1064
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Strausberg, R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo sapiens
                                                                                                                                                                                                                                                                                         BC002707
                                                                                                                                                                                                                                                                                                                                                                                                                                                      human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   source
                                                                                                                                                                                                                                                                                                                  DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AUTHORS
                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                  VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CDS
                                                                                                                                                                                                                                                           BC002707
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REMARK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                    SOURCE
                                                                                                                                                                                                                                       RESULT
                                                                                                                                                                                                                                                                                            LOCUS
                                              엄
                                                                                                      ò
```

DCEVSLWSSWGLCGGHCGRLGTKSRTRYVRVOPANNGSPCPELEEEAECVPDNCV"

```
61 tgcgctctcctcctggccactctcggcgccgccggccagcctcttgggggagagtccatc 120
                                                                                                                                                                                                                   Homo sapiens cDNA to mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /chromosome="4"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /gene="SPON2"
276.1271
/gene="SPON2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /map="4p16.3"
276. .1271
                                                                                                                                                                                            AB027466.1 GI:6172220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  98.28;
                                                                                                                                                                                                                                                                                                                      differential display
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                           .1807
                                                                                                                                                                                                        SPON2; spondin
                                                                                                                                                                                                                                Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                (sites)
                                                                                                                                                                                                                                                                                       okota, J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches 1097;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Source
                                                                                                                                                                    DEFINITION
                                                                                                                                                                                                                            ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BASE COUNT
                                  1021
                                                                                                                                                                                                                                                                                                                                                                             TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                      REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gene
                                                                                                                                      RESULT
AB027466
                                                                                                                                                                                 ACCESSION
                                                                                                                                                                                                                                                                REFERENCE
                                                                                                                                                                                                                                                                          AUTHORS
                                                                                                                                                                                                                                                                                                                                            MEDLINE
                                                                                                                                                                                                                                                                                                                                  JOURNAL
                                                                                                                                                                                                        KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                            VERSION
                                                                                                                                                                                                                                                                                                 TITLE
                                                                                                                                                                                                                   SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORIGIN
             q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     qq
                                   ò
                                                        qq
                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ŏ
                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          961 ccctgccccgagctcgaagaagaaggctgagtgcgtccctgataactgcgtctaagaccag 1020
                                                                                                                                                                                                                                                                                                                    cagacgtcggcggagctggaggtgcagcgcaggcactcgctggtctcgtttgtggtgcgc 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                         51 CGCTGCTCCTGCCGGGTGATGGAAAACCCCAGCCCGGCCGCCCCTGGGCCAAGGCCCTC 110
                                                                                                                                                                                121 tgttccgccagagccctggccaaatacagcatcacctgggcaagtggagccagacg 180
                                                                                                                                                                                                                             goottocccaagcagtacccctgttccgccccctgcccagtggtcttcgctgctgggg 240
                                                                                                                                                                                                                                                                          gccgcgcatagctccgactacagcatgtggaggaagaaccagtacgtcagtaacgggctg 300
                                                                                                                                                                                                                                                                                     471 CAGACGTCGGCGGAGCTGCAGCGCAGCCACTCGCTGGTCTCGTTTGTGGTGCGC 530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      601 ttcaccttctcctcccccaacttcgccaccatcccgcaggacacggtgaccgagataacg 660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               tectecteteccagecaceeggecaacteettetaetaecegeggetgaaggeeetgeet 720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gcccagtcctgcccagcaggacaatgagattgtagacagcgcctcagttccagaaacg 840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCCCCAGTCCTGCCCAGCAGGGACAATGAGATTGTAGACAGCGCCTCAGTTCCAGAAACG 890
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ccgctggactgcgaggtctccctgtggtcgtcctggggactgtgcggaggccactgtggg 900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        891 CCGCTGGACTGCGAGGTCTCCCTGTGGTCGTCGTGGGGACTGTGCGGAGGCCACTGTGGG 950
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 aggotcogggaccaagagcaggactcgctacgtccgggtccagcccgccaacaacgggagc 960
                                                                   Gaps
                                                                                        cgctgctcctgccgggtgatggaaaaccccagccggccgccctgggcaaggcctc 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               771 CCCATCGCCAGGTGACACTGCTGCGGCTGCGACAGAGCCCCAGGGCCTTCATCCTCCC
                                              Length 1634;
                                                                  0;
                                                                   4; Indels
                                             DB 9;
                                           Score 1098.6; DB 9;
Pred. No. 1.5e-149;
0; Mismatches 4;
  g
                                           Query Match 99.4%;
Best Local Similarity 99.6%;
Matches 1101; Conservative
  U
 550
                                           Query Match
Best Local Similarity
  Ø
 293
BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                            421
                                                                                                                                                                                                                            181
                                                                                                                                                                                                                                                                         241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               531
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        651
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   711
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           831
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     951
                                                                                                                                                                                                                                                                                                                                                                                                                                                         481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                901
                                                                                                                                                       qq
                                                                                        δ
                                                                                                             g
                                                                                                                                      ŏ
                                                                                                                                                                                õ
                                                                                                                                                                                                    q
                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                             a
                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                         q
                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                   q
                                                                                                                                                                                                                                                                                                                                                                                                            ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                        ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    qq
```

```
/translation="Mempspaalgkalcalllatlgaaggplggesicsarapakys
ITFTGKWSQTAFPKQYPLFRPPAQWSSLLGAAHSSDYSWWRKNQYVSNGLRDFAERGE
AWALMKEIERAGEALGSVHAVFSAPAVPSGTGQTSAELEVQRRHSLVSFVVRLVPSPD
WFVGVDSLLCDGDRWREQAALDLYPYDAGTDSGFTSSPPWTATIPQDTVTEITSSSP
SHPANSFYYRLKALPPIARYTLVPRRQSPRAFIPPAPVLPSRDNEIVDSASVPETPL
DCEVSLWSSWGLCGGHCGRLGTKSRTRYVRVQPANNGSPCPELEEEAECVPDNCV"
621 c 572 g 322 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eukaryota, Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Yokota,J., Kohno,T. and Manda,R.

Yokota,J., Kohno,T. and Manda,R.

First Submission

Submitted (18-MAY-1999) to the DDBJ/EMBL/GenBank databases. Jun
Yokota, National Cancer Center Research Institute, Biology
Division; Tsukiji 5-chome 1-1, Chuo-ku, Tokyo 104-0045, Japan

(E-mail: jyokotaqqan2.ncc.go.jp, Tel:81-3-3547-5272,
1021 agcccqcaqcccctggggccccccggagccatggggtgtcgggggctcctgtgcaggct 1080
1071 AGCCCCGAGCCCCTGGGGCCCCCCGGAGCCATGGGGTTGTCGGGGGTTCCTGTGAGGTT 1130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   05-NOV-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note="alias: DIL-1; extracellular matrix protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Identification of genes (SPON2 and c20orf2) differentially expressed between cancerous and noncancerous lung cells by
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Manda, R., Kohno, T., Matsuno, Y., Takenoshita, S., Kuwano, H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 1807;
                                                                                                                                                                                                                                                                                                                    лви2/466 1807 bp mRNA PRI 05
Homo sapiens SPON2 mRNA for spondin 2, complete cds.
AB027466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 1084.8; DB 9;
Pred. No. 1.4e-147;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /product="spondin 2"
/protein_id="BAA85892.1"
/db_xref="G1:6172221"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                      1131 CATGCTGCAGGCGCCGAGGGCACA 1155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Fax:81-3-3542-0807)
Location/Qualifiers
                                                                                                                   1081 catgctgcaggcggccgagggcaca 1105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Genomics 61 (1), 5-14 (1999)
99443867
```

<u>:</u>

```
1020
                                                                                                                                                                                                                                                                                                                                                                                                                         1021 agccccgcagcccctggggccccccggagccatggggtgtcgggggctcctgtgcaggct 1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1278 AGCCCCGCAGCCCCTGGGG-CCCCCGGAGCCATGGGGTGTCGGGGGCTCTGTGCAGGCT 1336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCGCTGGACTGCGAGGTCTCCCTGTGGTCGTCCTGGGGGACTGTGCGGAGGCCACTGTGGG 1157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                900
                                                                                                                                         360
                                                                                                                                                                             420
                                                                                                                                                                                               677
                                                                                                                                                                                                                 917
                                                                                                                                                                                                                                                                                                                                                                 cccatcgccagggtgacactggtgcggctgcgacagagccccagggccttcatccctcc 780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     901 aggetegggaceaagageaggactegetacgteegggteeageeegeeaaeaacgggage 960
181 gccttccccaagcagtaccccctgttccgccccctgcccagtggtcttcgctgctgggg 240
                                                                                  497
                                                                                                   gccgcgcatagctccgactacagcatgtggaggaagaaccagtacgtcagtaacgggctg 300
                                                                                                                      557
                                                                                                                                                           617
                                                                                                                                                                                                                                                     ategtgeceagececgaettggttegtgggegtggaeageetggaectgtgegaeggggae 540
                                                                                                                                                                                                                                                               ttcaccttctccccccaacttcgccaccatcccgcaggacacggtgaccgagataacg 660
                                                                          GCCTTCCCCAAGCAGTACCCCCTGTTCCGCCCCCTGCGCAGTGGTCTTCGCTGCTGGGG
                                                                                                                                         ccgctggactgcgaggtctccctgtggtcgtcctgggggactgtgcggaggccactgtggg
                            tgttccgccagagccctggccaaatacagcatcaccttcacgggcaagtggagccagacg
                                                                                                             ccctgccccgagctcgaagaagactgagtgcgtccctgataactgcgtctaagaccag
                                                                                                                                                                              gaggcgctgcagagcgtgcacgcggtgttttcggcgccgccgccgtcccagcggcaccggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1038
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1218
       318
                                             378
                                                                                                                                                          558
                                                                                                                                                                                              618
                                                                                                                                                                                                                                                     481
                                                                                                                                                                                                                                                                                           541
                                                                                                                                                                                                                                                                                                                              601
                                                                                                                                                                                                                                                                                                                                                828
                                                                                                                                                                                                                                                                                                                                                                                                                                            781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1337
                          121
                                                                                                    241
                                                                                                                      498
                                                                                                                                         301
                                                                                                                                                                             361
                                                                                                                                                                                                                 421
                                                                                                                                                                                                                                   678
                                                                                                                                                                                                                                                                                                           798
                                                                                                                                                                                                                                                                                                                                                                                                      721
                                                                                                                                                                                                                                                                                                                                                                                                                         978
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          961
                                                                                                                    g
                                                                                                                                         ò
                                                                                                                                                          g
                                                                                                                                                                                               g
                                                                                                                                                                                                                à
                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                        q
                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                               a
                                                                                                                                                                                                                                                                                                                                                                                  q
                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Op
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               a
                                                             ò
                                                                               q
                                                                                                   ò
                                                                                                                                                                                                                                                                                          ð
                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         õ
```

RESULT

```
/product="mindin precursor"
/protein_id="AAD38195.1"
/brotein_id="AAD38195.1"
/d_xref="eq: 5031506"
/translation="RENVSFSEDTHWVFLLAMLGSTAGQPLGGESVCTARPLARYSI
TFTGKWSQTAPPKQYPLFRPPAQWSSLLGAAHSSDYSWWRKNEYVSNGLRDFAERGEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FVGIDSLDLCEGGRWKEQVVLDLYPHDAGTDSGFTFSSPNFATIPQDTVTEITASSPS
HPANSFYYPRLKSLPPIAKVTFVRLRQSPRAFAPPSLDLASRGNEIVDSLSVPETPLD
CEVSLWSSWGLCGGPCGKLGAKSRTRYVRVQPANNGTPCPELBEEAECAPDNCV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2 (bases 1 to 2325)
Feinstein,Y., Borrell,V., Garcia,C.; Burstyn-Cohen,T., Tzarfaty,V.,
Frumkin,A., Nose,A., Okamoto,H., Higashijima,S., Soriano,A. and
                                                                                                                                                                                                                                                (bases 1 to 2325)
Feinstein,Y., Borrell,V., Garcia,C., Burstyn-Cohen,T., Tzarfaty,V.,
Frumkin,A., Nose,A., Okamoto,H., Higashijima,S., Soriano,A. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WALMKEIEAAGEKLOSVHAVFSAPAVPSGTGQTSAELEVHPRHSLVSFVVRIVPSPDW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Direct Submission
Submitted (30-MAY-1999) Anatomy & Cell Biology, Hebrew University,
PO Box 12272, Jerusalem 91120, Israel
Location/Qualifiers
                                                                                                                                                                                       Vertebrata; Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                related
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    531 CCCTGGACAGAACTCTTTGGGTCTTCCTCCTGGCCATGCTAGGCTCCACCGCAGGCCAGC 590
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     egggcaagtggagccagacggccttccccaagcagtaccccctgttccgccccctgccc 220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               651 CTGGCAAGTGGAGCCAGACAGCATTTCCCAAGCAGTATCCTCTGTTCCGGCCCCCTGCAC 710
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             agtggtcttcgctgctggggggccgcgcatagctccgactacagcatgtggaggaagaacc 280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    44 ccctgggcaaggccctctgcgctctcctcggccactctcgg---cgccgccggccagc 100
                       23-DEC-1999
                                                                                                                                                                                  Eukaryota; Métazoa; Chordata; Craniata; Vertebrata; Euteleost
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ctcttgggggagagtccatctgttccgccagagccctggccaaatacagcatcaccttca
                                                                                                                                                                                                                                                                                                                                           F-spondin and mindin: two structurally and functionally reggenes expressed in the hippocampus that promote outgrowth embryonic hippocampal neurons Development 126 (16), 3637-3648 (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 2325;
  AF155196 2325 bp mRNA ROD 23-DE
Rattus norvegicus mindin precursor, mKNA, complete cds.
AF155196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /ucc...../
/product="mindin"
1322. 1501
/note="Region: thrombospondin type 1 repeat"
/note="Region: thrombospondin type 1 repeat"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          60.2%; Score 665.6; DB 10;
llarity 80.1%; Pred. No. 3.1e-87;
Conservative 0; Mismatches 194;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note="Region: spondin domain"

    2325 / Actus norvegicus"

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note="adhesion molecule"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /strain="Sprague Dawley"
/db_xref="taxon:10116"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /codon_start=1
                                                                                          AF155196.1 GI:5031505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              578. .1321
                                                                                                                                     Norway rat.
Rattus norvegicus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Local Similarity
es 795; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    553 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                10409509
                                                                                                                                                                                                                                  Rattus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Klar, A.
                                                                                                                                                                                                                                                                                                                          Klar, A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         sig_peptide
misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            mat_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        source
                                             DEFINITION
ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BASE COUNT
                                                                                                                                                             ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             221
                                                                                          VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AUTHORS
                                                                                                                                                                                                                                                                             AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                  JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CDS
AF155196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
```

```
Similarity
  98104230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      633
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         591;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Local
Matches 59
                                                                                                                                                                                                                                                               source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  625
MEDLINE
                             REFERENCE
                                                     AUTHORS
                                                                                                             JOURNAL
                                                                                                                                                                                                                              FEATURES
                                                                                      TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Actinopterygii; Neopterygii; Teleostei; Euteleostei; Ostariophysi; Cypriniformes; Cyprinidae; Rasborinae; Danio.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                941 agcccgccaacaacgggagcccctgccccgagctcgaagaagaggctgagtgcgtcctg 1000 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1071 ATGCAGGGACAGACAGTGGCTTCACCTTCTCCCCCCAACTTTGCAACCATCCCACAAG 1130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCAGAGCCTTTGCCCCACCTTCCCTGGACCTGGCCAGCAGGAAATGAAATCGTTGACA 1310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1371 TGTGCGGAGGCCCATGTGGAAAGTTGGGAGCCAAGAGCAGAACTCGCTATGTGCGTGTTC 1430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    tgtgcggaggccactgtgggaggctcgggaccaagagcaggactcgctacgtccgggtcc 940
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ccagggccttcatccctcccgccccagtcctgcccagcagggacaatgagattgtagaca 820
891 CCGTGCCTAGTGGTACCGGGCAGACTTCTGCAGAGTTAGAGGTGCACCTAGGCACTCGC 950
                                                                                                                                                                                                                                                                                                                                                                                                                                  tggtctcgtttgtggtgcgcatcgtgcccagccccgactggttcgtggggcgtggacagcc 520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             tggacctgtgcgacgggggaccgttggcgggaacaggcggcgctggacctgtacccctacg 580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         acacggigaccgagataacgicciccicciccagccacccggccaactccttctactacc 700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cgcggctgaaggccctgcctcccatcgccagggtgacactggtgcggctgcgacagagcc 760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              10-MAY-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Higashijima,S., Nose,A., Eguchi,G., Hotta,Y. and Okamoto,H. Mindin/F-spondin family: novel ECM proteins expressed in the Zebrafish embryonic axis Dev. Biol. 192 (2), 211-227 (1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           581 acgccgggacggacagcgcttcaccttctcctccccaacttcgccaccatcccgcagg
                                                                                         agtacgtcagtaacgggctgcgactttgcggagcgcggcgaggcctgggcgctgatga
                                                                                                                                              771 AGTACGTCAGCAATGGGCTGAGGGACTTCGCTGAGCGTGGTGAGGCCTGGGCCACTGATGA
                                                                                                                                                                                                                                                                                                                       ccgtccccagcggcaccgggcagacgtcggcggagctggaggtgcagcgcaggcactcgc
                                                                                                                                                                                                       aggagategaggegggggggggggegetgeagagegtgeaegggtgtttteggegeeeg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Danio rerio mRNA for MINDIN2, complete cds. AB006085
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1001 ataactgcgtctaagaccagagcccgcagcc 1032
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1491 ATAACTGTGTCTAAACCCAGACCCCAGTAGCC 1522
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Danio rerio embryo cDNA to mRNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AB006085.1 GI:2529222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2116 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Danio rerio
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AB006085
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MINDIN2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ,761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM
                                                                                                                                                                                                                                                            831
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    881
                                711
                                                                                                                                                                                                                                                                                                                                                                                                                                  461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
                                                                                         281
                                                                                                                                                                                                                                                                                                                     401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AB006085
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        a
                                                                                                                                                                                                                                                         Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                g
                                                                                         ò
                                                                                                                                              g
                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                       ŝ
                                                                                                                                                                                                                                                                                                                                                                          d
                                                                                                                                                                                                                                                                                                                                                                                                                                  ŏ
```

```
WTLIKEVEAAGERIQSVYGLESAPAVVACTGHATTEFEVFARHSLLSFIVRIVDSPDW
FIGODSLINGLEGEDHGKBIN SLELYPYDAGTDGSCPFSSBPFETI PQDVYVQTISSFPS
HPANSFYYPRIKHLIPPIANVSLTKIKNOITSLPIOPTOSNOIPSGNEIDGPLINTPL
DCEVSVWSPWGLCKGQCGEKGVKHRTRYIHMHPANNGAPCPSLEEKRLCIPDNCV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /translation="METWISLRVNGWLTWILALLSGVPAMPVDVDRWCTAPSTAKYRL TFTGGWTQTAFPKHYPLYRPPAQWSPLIGVTHSSDYHLWQRNEYASNGVREFSERAEA
                                                                                                                  for Basic Biology, Division of Morphogenesis; Mishigonaka38, Myodaijich, Okazaki, Aichi 444, Japan (E-mail:shinichienibb.ac.jp, Tel:81-564-55-7572, Fas. 81-564-55-7571)
2 (bases 1 to 2116)
Higashliana.S.
Direct Submission
Submitted (28-JUL-1997) Shin-ichi Higashijima, National Institute
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1022 CICTICICAGCGCCAGCIGIGGIIGCAGGAACIGGCCACGCAACCACAAAIIIGAGGIC 1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1082 TTTGCGAGACACTCTTTGCTGTCCTTCATTGTTCGCCATGTGCCCAAGTCCTGACTGGTTT 1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1202 GAGCTCTACCCCTATGATGCCGGCACAGACAGTGGTTTCACCTTCTCCTCGCCAAACTTT 1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAAACCATTCCTCAAGACAAGGTCACTCAGATAACCTCATCATTCCCAAGCCACCCAGCA 1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gacctgtacccctacgacgccgggacggacagcgcttcaccttctcctcccccaacttc 624
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         385 gtgttttcggcgcccgccgtccccagcggcaccgggcagacgtcggcggaggtg 444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gccaccatcccgcaggacacggtgaccgagataacgtcctcctcctcccagccaccggcc 684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             685 aacteettetaetaecegeggetgaaggeeetgeeteecategeeagggtgaeactggtg 744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            325 gcctggggcgctgatgaaggagatcgaggcggcggggggaggcgctgcagagcgtgcacgcg 384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ggegeegeeggeeageetettgggggagagteeatetgtteegeeagageeetggeeaaa 144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      722 GGAGTCCCTGCAATGCCGGTGGATGTGGACCGCATGTGCACGGCCCCTTCCACGGCTAAG 781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             tteegeeeeetgeeeagtggtettegetgeggggggeegeatageteegaetaeage 264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   265 atgtggaggaagaaccagtacgtcagtaacgggctgcgcgactttgcggagcgcgag 324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     445 cagcgcaggcactcgctggtctcgtttgtggtgcgcatcgtgcccagccccgactggttc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTCTGGCAAAGGAATGAGTACGCCAGTAATGGGGTGAGAGTTCTCTGAGAGAGCAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       145 tacagcatcaccttcacgggcaagtggagccagacggccttccccaagcagtacccctg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 5; Length 2116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               32.8%; Score 362.6; DB 562.0%; Pred. No. 1.4e-43;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                   /product="MINDIN2"
/protein_id="BAA22809.1"
/db_xref="G1:2529223"
                                                                                                                                                                                                                                              1. 2116
/organism="Danio rerio"
/db_xref="taxon:7955"
                                                                                                                                                                                                                                                                                                                                             /dev_stage="embryo"
559. .1654
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      413 9
                                                                                                                                                                                                                                                                                                                                                                                                            /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         478 C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
```

```
4
1322 AACTCTITCIACTAICCCAGAITGAAGCACCICCCCCCAATIGCCAAAGICICICIAACC 1381
                                                                   1382 AAGATCAAGAACAACCAGATCTTCAGCTTACCCATCCAGCCAACACAGTCCAATCAGATC 1441
                                                                                                              1562 ACCCGTTATATTCACATGCATCCTGCAAACAACGGTGCTCCCTGTCCATCCCTAGAGGAA 1621
                                                                                                 ---aatgagattgtagacagcgcctcagttccagaaacgccgctggactgcgaggtctcc 861
                                                                                                                                                      862 ctgtggtcgtcctggggactgtgcggaggccactgtgggaggctcgggaccaagagcagg 921
                                                                                                                                                                                                                   981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               570 gtacccctacgacgccgggacggacagcgcttcaccttctccccccaacttcgccac 629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           689
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        60 CATCCCGCA-GACACGGTGACCGAGATAACGTCCTCTCTCTCTCCCGGCCGCCGGCCAGCTAC 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 749
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                809
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gtcctggggactgtgcggaggccactgtgggaggctcgggaccaagagcaggactcgcta 929
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gattgtagacagcgcctcagttccagaaacgccgctggactgcgaggtctccctgtggtc 869
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                           29-SEP-1999
                                                                                                                                                                                                              922 actogotacgtccgggtccagcccgccaacaacgggagcccctgccccgagctcgaagaa
                                          745 eggetgegacagagececagggeetteatecetecegececagteetgeecageaggae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 (bases 1 to 400)
Sytkowski,A.J. and Yang,M.
Methods for identifying differentially expressed genes and
differences between genomic nucleic acid sequences
Patent: US 5804382-A 1 08-SEP-1998;
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             690 ettetaetaecegeggetgaaggeeetgeeteeeategeeagggtgaeaetggtgegget
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   750 gogacagagococcagggoottcatocotocogococagtootggooaggacaatga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  630 catcccgcaggacacggtgaccgagataacgtcctcctctcccagccacccggccaactc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          982 gaggetgagtgegteectgataactgegtetaagaecagageecegeageeec 1034
                                                                                                                                                                                                                                                                                     5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 6; Length 400;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     7; Indels
                                                                                                                                                                                                                                                                                                                                                                         PAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 343.8; DB 6
Pred. No. 1.6e-40;
0; Mismatches 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ىد
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    63
                                                                                                                                                                                                                                                                                                                                                                              Sequence 1 from patent US 5804382. AR037874
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /organism="unknown"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    110 g
                                                                                                                                                                                                                                                                                                                                                                                                                 GI:5956591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          31.18;
97.08;
                                                                                                                                                                                                                                                                                                                                                                        400 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  157 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      est_Local Similarity 97.0
atches 393; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Unclassified
                                                                                                                                                                                                                                                                                                                                                                                                                 AR037874.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  70 a
                                                                                                                                                                                                                                                                                                                                                                      AR037874
                                                                                                                                                                                                                                                                                                                                                                                                                                            Unknown.
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         source
                                                                                                 802
                                                                                                                                                                                                                                                                                                                                                                                    DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                  ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  870
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
                                                                                                                                                                                                                                                                                                                                                         AR037874
                                                                                                                                                                                                                                                                                                                                                                                                                           KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE
                                                                                                                                                                                                                                                                                                                                             RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   V
             셤
                                         ŏ
                                                                                                 õ
                                                                                                                            g
                                                                                                                                                                                 윱
                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                          음
                                                                                                                                                                                                                                                                                                 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
```

```
4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 197176)
                                                                                                                                                                                                                                                     \rm N\bar{p}G\textsubscript{-}1 gene that is differentially expressed in prostate tumors Patent: US 6177244-A 1 23-JAN-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      749
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          869
                                                                                                                                                                                                                                                                                                                                                                                                                                                  570 gtacccctacgacgccgggacggacagcgcttcaccttctcccccaacttcgccac 629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              750 gcgacagagccccagggccttcatccctcccgccccagtcctgcccagcagggacaatga 809
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    929
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             296 GTCCTGGGGACTGTGCGGAGGCCACTGTGGGAGGCTCGGGTCCAAGAGCAGGACTCCGTA 355
                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                       16-MAY-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    27-APR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           00 CATCCCGCA-GACACGGTGACCGAGATAACGTCCTCTCTCCCAGCCACCCGGCCAGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   177 GCGRCAGAGCCCCAGGGCCTTCATCCTCCCCCCCAGTCCTGCCCAGCA-GGACAATGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 870 gtcctggggactgtgcggaggccactgtgggaggctcgggaccaagagcaggactcgcta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          630 catcccgcaggacacggtgaccgagataacgtcctctctcccagccacccggccaactc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     690 cttctactacccgcggctgaaggccctgcctcccatcgccagggtgacactggtgcggct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       810 gattgtagacagcgcctcagttccagaaacgccgctggactgcgaggtctccctgtggtc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AC022763 197176 bp DNA HTG 27-APR-20
HOMO sapiens clone RPI1-296G16, WORKING DRAFT SEQUENCE, 24
Unordered pieces.
                                                                                                                                                                                                                                                                                                                                                                                                                       .,
2
                                                                                                                                                                                                                                                                                                                                                                                          6; Length 400;
                                                                                                                                                                                                                                                                                                                                                                                                                      10; Indels
                 356 CGCCCGGGTCCAGCCGCCAACAACGGGAGCCCCTGCCCCGAGCT 400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         930 cgtccgggtccagcccgccaacaacgggagcccctgccccgagct
                                                                                                       PAT
                                                                                                                                                                                                                                                                                                                                                                                       Score 339; DB 6,
Pred. No. 8e-40;
0; Mismatches 1
                                                                                                                                                                                                                                                                                                                               ب
                                                                                                                                                                                                                                                                                                                               63
                                                                                         Sequence 1 from patent US 6177244. ARI25230
                                                                                                                                                                                                                                                                                    Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AC022763.2 GI:7652738
HTG: HTGS_PHASE1; HTGS_DRAFT
                                                                                                                                                                                                                                                                                                                /organism="unknown"
                                                                                                                                                                                                                                                                                                                             109 g
                                                                                                                                                                                                                       1 (bases 1 to 400)
Sytkowski, A.J. and Yang, M.
                                                                                                                                              AR125230.1 GI:14111292
                                                                                                                                                                                                                                                                                                                                                                                       30.7%;
96.3%;
                                                                                                                                                                                                                                                                                                                             159 c
                                                                                                                                                                                                                                                                                                                                                                                     Query Match 30.7
Best Local Similarity 96.3
Matches 390; Conservative
                                                                                                                                                                                                                                                                                                .400
                                                                                                                                                                                                           Unclassified.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Homo sapiens
                                                                                                                                                                                                                                                                                                                             69 a
                                                                                                                                                                               Unknown.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AC022763
                                                                                                                                                                                              Unknown.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         human.
                                                                                                                                                                                                                                                                                                   source
                                                                                                                 DEFINITION
                                                                                                                                                                                          ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
                                                                                                                                                                                                                                                                                                                             BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AC022763/c
                                                                                                                                   ACCESSION
                                                                                                                                                                                                                                                                   JOURNAL
                                                                        RESULT
AR125230
                                                                                                                                                                                                                         REFERENCE
                                                                                                                                                                                                                                        AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
                                                                                                                                                               KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                    FEATURES
                                                                                                                                                 VERSION
                                                                                                                                                                                                                                                      TITLE
                                                                                                                                                                               SOURCE
                                                                                                                                                                                                                                                                                                                                             ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT
                                                                                                      LOCUS
                          Pp
ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              pp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        pp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
```

```
misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                 Sirren, B. Linton, L., Nusbaum, C., Lander, E., Abraham, H., Allen, N., Anderson, S., Baldwin, J., Barna, N., Beckerly, R., Beda, F., Anderson, S., Baldwin, J., Barna, N., Beckerly, R., Beda, F., Bouguslavkiy, L., Boukhgalter, B., Brown, A., Burkett, G., Castle, A., Choepel, Y., Colangelo, M., Collins, S., Collymore, A., Cooke, P., DeArellano, K., Dewar, K., Donino, M., Doyle, M., Fenestor, J., Ferreira, P., FitzHugh, W., Forrest, C., Gage, D., Galagan, J., Gardyna, S., Grant, G., Hagos, B., Heaford, A., Horton, L., Howland, J.C., Johnson, R., Jones, C., Kann, L., Karatas, A., Klein, J., Marquis, N., McEwan, P., McCurk, A., McKernan, K., McPheeters, R., Meldrim, J., McDewan, P., McCurk, A., McKernan, K., McMens, C.H., O'Connor, T., O'Donnell, P., Olivar, T.M., Peterson, K., Severy, P., Spencer, B., Stange-Thomann, N., Stojanovic, N., Subramanian, A., Talamas, J., Tesfaye, S., Theodore, J., Stojanovic, N., Subramanian, A., Talamas, J., Tesfaye, S., Theodore, J., Tirrell, A., Vassiliev, H., Viel, R., Wux, X., Wyman, D., Ve, W.J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Direct Submission
Submitsed (Ge-FBB-2000) Whitehead Institute/MIT Center for Genome Submitted (Ge-FBB-2000) Whitehead Institute/MIT Center for Genome Research, 320 Charles Street, Cambridge, MA 02141, USA on Apr 27, 2000 this sequence version replaced gi:6987625.
All repeats were identified using RepeatMasker:
Smit, A.F.A. & Green, P. (1996-1997)
http://ftp.genome.washington.edu/RM/RepeatMasker.html
Center: Whitehead Institute/ MIT Center for Genome Research
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NOTE: This is a 'working draft' sequence. It currently consists of 24 contigs. The true order of the pieces is not known and their order in this sequence record is arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the apps are unknown. This record will be updated with the finished sequence as soon as it is available and the accession number will be preserved.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequencing vector: M13; M77815; 100% of reads Chemistry: Dye-terminator B19 Dye; 100% of reads Assembly program: Phtap; version 0.960731 consensus quality: 185565 bases at least Q40 consensus quality: 189099 bases at least Q30 consensus quality: 192979 bases at least Q20 Insert size: 188000; agarose-fp sum-of-contigs Quality coverage: 4.5 in Q20 bases; sum-of-contigs Quality coverage: 4.5 in Q20 bases; sum-of-contigs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         100 bp
of 2341 bp in length
100 bp
of 2640 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2495 2594: gap of 100 bp 2595 3740: contig of 1146 bp in length 100 bp 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gap of 100 bp 12494: contig of 1956 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               12232: gap of 100 bp
15557: contig of 3325 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           p of 100 bp
contig of 4329 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9021: gap of 100 bp
12132: contig of 3111 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                20086: gap of 100 bp 21983: contig of 1897 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      438: contig of 438 bp in length
Birren, B., Linton, L., Nusbaum, C. and Lander, E. Homo sapiens, clone RP11-296G16
Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Center clone name: 296_G_16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            contig of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                19986: cont
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6182 6281; gap of 6282 8921; col
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        439 538; gap of
                                                                                                                                                       (bases 1 to 197176)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          15657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     15558
15658
19987
20087
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9022
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8922
                                                                 TITLE
JOURNAL
                    AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       OURNAL
                                                                                                                                                                 REFERENCE
                                                                                                                                                                                                               AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMMENT
```

```
1330: gap of 100 bp
105063: contig of 12733 bp in length
15163: gap of 100 bp
115199: contig of 10036 bp in length
                                                                                                                                                                                                                                                                                                                                                                                    115200 115299; gap of 100 bp
115300 127901; contig of 12602 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                   127902 128001: gap of 100 bp
128002 145911: contig of 17910 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                   145912 146011: gap of 100 bp 1
146012 197176: contig of 51165 bp in length.
                                                                                                                                                                                         52949; gap of 100 bp
63466; contig of 10517 bp in length
6366; gap of 100 bp
70466; contig of 6900 bp in length
                                                                                                                                                                                                                                                                                       o of 100 bp contig of 11719 bp in length
                                                                                                                                                                                                                                                      70566: gap of 100 bp
80411: contig of 9845 bp in length
                                                                                                                        p of 100 bp contig of 4125 bp in length
                           o of 100 bp
contig of 4367 bp in length
                                                           p of 100 bp contig of 4596 bp in length
                                                                                             13: gap of 100 bp
41819: contig of 5706 bp in length
                                                                                                                                                         p of 100 bp contig of 6705 bp in length
               contig of 4767 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /clone_lib="RPCI-11 Human Male BAC"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         52950. .63466
/note="assembly_fragment"
63567. .70466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            46145. .52849
/note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8841. 6181
/note="assembly_fragment"
5282. 8921
/note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          36114. .41819
/note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         11920. 46044
/note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9022. .12132
/note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="assembly_fragment"
15658, .19986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             26951. .31317
/note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    'note≂"assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 'note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            20087. .21983
/note="assembly_fragment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note="assembly_fragment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /clone="RP11-296G16"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           vector_side:left"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  vector_side:left"
539. .2494
                      31317; cont
                                                                                                                                                                                                                      63566: gap of
70466: cont
                                                                                                                                                                                                                                                                                       80412 80511: gap of
80512 92230: cont
                                                              31417; gap of 36013; cont
                                                                                                                             gap of
                                                                                                                                                            46144: gap of
                                                                                                                                                                                                                                                                                                                       92330: gap of
21984 22083: gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              clone_end:SP6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .36013
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  12233. .15557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       clone_end:T7
                                                                                                                                             46044:
                                                                                                                                                                           52849:
               6850:
                                                                                                                                                                                                                                                                                                                                                       105064 105163:
                                                                                             36113:
                                                                                                                            41919:
                              26950:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              22084.
                                                                                                            36114 \\ 41820
                                                                                                                                                                                                                                                          70467
                                                                            31418
36014
                                                                                                                                                            46045
                                                                                                                                                                                                                             63467
                                                                                                                                                                                                                                                                                                                                                                       105164
                                                              31318
                                                                                                                                                                                           52850
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  misc_feature
```

JOURNAL

```
Oy 212 ccctgcccagtggtcttcgctgctgggggccqcgcatagctccgactacagcatgtgga 271
Db 133359 CGGCGGGCGGGGGGGGGCCGGGCCGCGCATAGCTCCGACTACAGCATGTGGA 133300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Db 133299 GGAAGAACCAGTACGTCAGTAACGGGCTGCGCGACCTTTGCGGAGCGCGGGGCCTGGG 133240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Db 133239 CGCTGATGAAGGAGATGGAGGGGGGGGGGGGGGGCTGCAGAGGGTGCAGCGGTGTTT 133180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    132999 GGTTCGTGGGCGTGGACGTCGACCTGTGCGACGGGGACCGTTGGCGGGACCGGTTGGCGGGACAGGCGG 132940
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Db 133119 GCCACTCGCTGGTGAGCGCGGGCCGGGCGGGGGGGGGCCGGGGGCCGGGGCCAGGC 133060
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Db 133059 GCGCTGAGCCGCTGTCGCCGCAGTCTCGTTTGTGGTGCGCATCGTGCCCCAGCCCCGACT 133000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Db 132939 CGCTGGACCTGTACCCCTACGACGCGGACGGACGGCCTTCACCTTCTCCTCCCCCCA 132880
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           332 cgctgatgaaggagatcgaggcggcggggggggggcgctgcagagggtgcacgcggtgtttt 391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ----- 461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            560 cgctggacctgtacccctacgacgccgggacggacagggcttcaccttctccccca 619
                                                                                                                                                                                                                                                                                                                                                                                                                                72; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            272 ggaagaaccagtacgtcagtaacgggctgcgcgactttgcggagcgcggggggcctggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             500 ggttcgtgggcgtggacagcctggacctgtgcgacggggaccgttggcgggaacaggcgg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ery Match 30.4%; Score 336.2; DB 2; Length 197176; est Local Similarity 82.7%; Pred. No. 1e-40; Matches 429; Conservative 0; Mismatches 18; Indels 72;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 (bases 1 to 506)
Hastings,G. and Dillon,P.J.
Nucleic acids encoding human neuronal attachment factor-1
                                                                                                                                                                                                                                                                                                           2303 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PAT
                                                                                                                                                         /note="assembly_fragment"
115300. .127901
.128002. .145911
.128002. .145911
./note="assembly_fragment"
146012. .197176
./note="assembly_fragment"
a 49476 c 49808 g 48706 t
/note="assembly_fragment"
70567. .80411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AR035966 506 bp DNA
Sequence 15 from patent US 5871969.
AR035966
                      70567. .80411
/note="assembly_fragment"
                                                                                   /note="assembly_fragment"
92331. .105063
                                                                                                                      /note="assembly_fragment"
105164. .115199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     452 ggcactcqct------
                                                              80512. .92230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AR035966.1 GI:5952634
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Unclassified.
                                                                                                                                                                                                                                                                                                         46883 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Unknown.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Unknown
                                                                misc_feature
                                                                                                     misc_feature
                                                                                                                                             misc_feature
                                                                                                                                                                                  misc_feature
                                                                                                                                                                                                                            misc_feature
                                                                                                                                                                                                                                                               misc_feature
                                                                                                                                                                                                                                                                                                       BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AR035966
                                                                                                                                                                                                                                                                                                                          ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ŏ
```

```
4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Submitted (24-AUG-2000) to the DDBJ/ENBL/GenBank databases. Osamu Obara, Kazusa DNA Research Institute, Department of Human Gene Research, 1532-3, Yana, Kisarazu, Chiba 292-0812, Japan (E-mail:cdnainfo@kazusa.or.ip, URL:http://www.kazusa.or.ip/NEDO, Tel:81-438-52-3913, Fax:81-438-52-3914)
NEDO human DNA sequencing project supported by Ministry of International Trade and Industry of Japan; cDNA full insert sequencing: Research Association for Biotechnology; cDNA library construction, 5'- & 3'-end one pass sequencing and clone selection:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 4292)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              The nucleotide sequence of a long cDNA clone isolated from human
                                                                                                                                                                                                                                                                                                                         73 ctggccactctcggcgccgccggccagcctcttgggggagagtccatctgttccgccaga 132
                                                                                                                                                                                                                                                                                                                                              133 gocotggccaaatacagcatcaccttcacgggcaagtggagccagacggccttccccaag 192
                                                                                                                                                                                                                                                                                                                                                                                                                          125 GCCCGGCCAAATACAGCATCACCTTCACGGCAAAGTGGAGCCAACGGCCTTCCCCAAG 184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   193 cagtacccctgttccgccccctgcccagtggtcttcgctgctgggggccgcatagc 252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 253 tccgactacagcatgtggaggaaccagtacgtcagtaacgggctgcgcgactttgcg 312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4; Gaps
                                                                                                                                                                                                                                           13 cgggtgatggaaaaccccagcccggccgccgcctgggcaaggccctctgcgctctcctc 72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           29-SEP-2000
                                                                                                                                                                                                                                                                                   6 CGGCANAGGNNAAACCCCAGCCCGGCTGCCGCCTGGGCCAAGGCCTNCTGCGCTCTCCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             185 CAGTACCCCTGTTCCGCCCCCCTGCGCA-TGGTNTTCGCTGCTGGGGGCCGCGCATAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   fis (full insert sequence). Homo sapiens adult spleen cDNA to mRNA, clone:as00108.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ARO24499 4292 bp mRNA PRI 29
HOMO sapiens mRNA for FLJ00108 protein, partial cds.
AK024499
                                                                                                                                                               Length 506;
                                                                                    29 others
                                                                                                                                                           Score 300; DB 6; Length 50
Pred. No. 3e-34;
0; Mismatches 62; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2 (bases 1 to 4292)
Ohara,O., Nagase,T., Kikuno,R. and Okumura,K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ohara, O., Nagase, T., Kikuno, R. and Okumura, K
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Published Only in DataBase (2000) In press
                                                                                    ب
Patent: US 5871969-A 15 16-FEB-1999;
Location/Qualifiers
1. .506
                                                                                  100
                                                          /organism="unknown"
136 c 150 g
                                                                               150 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AK024499.1 GI:10440517
                                                                                                                                                           27.1%;
84.8%;
                                                                                                                                                                                                   Matches 368; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            433 gagctggaggtgca 446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                422 GNTTTNNAGTTTNA 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens
                                                                                                                                                                                  Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     spleen
                                                                                                                                                               Query Match
                                            source
                                                                           BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VERSION
KEYWORDS
                     FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AK024499
                                                                                                  ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SOURCE
                                                                                                                                                                                                                                             ŏ
                                                                                                                                                                                                                                                                                                                                                               qq
                                                                                                                                                                                                                                                                               a
                                                                                                                                                                                                                                                                                                                       óλ
                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
```

```
1. .2820
/note="highly similar to AB027466 Homo sapiens SPON2 mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi; Actinopterygii; Neopterygii; Teleostei; Euteleostei; Ostariophysi; Cypriniformes; Cyprinidae; Rasborinae; Danio.
                                                                                                               Submitted (29-AUG-2000) to the DDBJ/EMBL/GenBank databases. Sumio
                                                                                                                                                                                                                                               NEDO human CDNA sequencing project supported by Ministry of International Trade and Industry of Japan; CDNA full insert sequencing: Research Association for Biotechnology; CDNA library construction, 5'- & 3'-end one pass sequencing: Departent of Virology and Human Genome Center, Institute of Medical Science, University of Tokyo (partly supported by Science and Technology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1007 gcgtctaagaccagagccccgcagccctgggggccccccggagccatgggggtgtcgggggg 1066
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2259 GCGTCTAAGACCAGAGCCCCGCAGCCCCTGGGGCCCCCCGGAGCCATGGGGTGTCGGGGG 2318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            947 ccaacaacgggagcccctgccccgagctcgaagaagaggctgagtgcgtccctgataact 1006
              2 (bases 1 to 2820)
Sugano, S., Suzuki, Y., Ota, T., Obayashi, M., Nishi, T., Isogai, T.,
Shibahara, T., Tanaka, T. and Nakamura, Y.
Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                Sugano, Institute of Medical Science, University of Tokyo, Laboratory of Genome Structure Analysis, Human Genome Center; Shirokane-dai, 4-6-1, Minato-ku, Tokyo 108-8639, Japan (E-mail:cdnal@ims.u-tokyo.ac.jp, Tel:81-3-5449-5286, Fax:81-3-5449-5416)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        10-MAY-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 (sites)
Higashijima,S., Nose,A., Eguchi,G., Hotta,Y. and Okamoto,H.
Amindin/F-spondin family: novel ECM proteins expressed in the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       887 gaggccactgtgggaggctcgggaccaagagcaggactcgctacgtccgggtccagcccg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2139 GAGGCCACTGTGGGAGGCTCGGGACCAAGAGCAGGACTCGCTACGTCCGGGTCCAGCCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2199 CCAACAACGGGAGCCCTGCCCCGAGCTCGAAGAAGAGGCTGAGTGCGTCCCTGATAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /cell_type="primary human renal epithelial cells" /clone="HRC08032"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 9; Length 2820;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ABOO66084 3381 bp mRNA Danio rerio mRNA for MINDINI, complete cds. ABOO66084
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1067 ctcctgtgcaggctcatgctgcaggcgggcgaggggaca 1105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     25.1%; Score 277.4; DB 9;
99.6%; Pred. No. 2.3e-31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2319 CTCCTGTGCAGGCTCATACTGCAGGCGGCCGAGGGCACA 2357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /clone_lib="HRC"
/note="cloning vector pME18SFL3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             563 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                 /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Danio rerio embryo cDNA to mRNA. Danio rerio
                                                                                                                                                                                                                                                                                                                                                                                                              Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           873 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        for spondin 2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AB006084.1 GI:2529220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  849 C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches 278; Conservative
Unpublished (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ø
                                                                                                                                                                                                                                                                                                                                                                                           Agency).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MINDIN1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                535
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                        source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
  JOURNAL
                       KEFERENCE
                                                 AUTHORS
                                                                                                                 JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AB006084
                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VERSION
                                                                                            TITLE
                                                                                                                                                                                                                                                      COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ΟŊ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ALDLYPYDAGTDSGFTFSSPNFATIPQDTVTEVSGHPACARAAMAPAVGTGLGPGCTL
ASQPRTAACGFCVEEALLLAPAVSKGVQPSHTLPTRGHSTAGRTAGRASRGGRPFLAS
VSSPCSVGWLRGVHGTLSPTVVQRVRWTLGSGPSEAIRIPEGGLLGPQANLFFLPR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /translation="SAELEVQRRHSLVSFVVRIVPSPDWFVGVDSLDLCDGDRWREQA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Homo sapiens cDNA: PLJ22401 fis, clone HRC08032, highly similar to AB027466 Homo sapiens SPON2 mRNA for spondin 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Kawabata,A., Hikiji,T., Kobatake,N., Inagaki,H., Ikema,Y.,
Okamoto,S., Okitani,R., Ota,T., Suzuki,Y., Obayashi,M., Nishi,T.,
Shibahara,T., Tanaka,T., Nakamura,Y., Isogai,T. and Sugano,S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1007 gegictaagaccagageeeegeageeeetggggeeeeeeggaageeatggggtgieggggg 1066
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3568 CAGTICCAGAAACGCCGCTGGACTCCCGTGCCTCCCTGTGCTCCTGGGGACTGTGCG 3627
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ccaacaacgggagccctgccccgagctcgaagaagaggctgagtgcgtccctgataact 1006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3628 GAGGCCACTGTGGGAGGCTCGGGACCAAGAGCAGGACTCGCTACGTCCGGGTCCAGCCCG 3687
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3688 CCAACAACGGGAGCCCCTGCCCCGAGCTCGAAGAAGAGGCTGAGTGCGTCCCTGATAACT 3747
                                                                                                                                                                                                                                                                                              Jobbe "For this clone, GeneMark analysis triggered an alert for spurious CDS split. The result of GeneMark analysis of the nucleotide sequence of this clone is accessible through http://www.kazusa.or.jp/NEDO. Start codon is not identified."
/codon_start=3
/product="FLJ0108 protein"
/protein_id="BAB15789.1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            oligo capping; fis [full insert sequence).
Homo sapiens primary human renal epithelial cells cDNA to mRNA, clone_lib:HRC clone:HRC08032.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       887 gaggccactgtgggagtcgggaccaagagcaggactcgctacgtccgggtccagcccg 946
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               827 cagitecagaaacgeegeiggaeigegagiteteeeigiggiegteeiggggaeigieg 886
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           29-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 4292;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                            /tissue_type="spleen"
/note="vector:pBluescriptII SK plus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            25.2%; Score 279; DB 9; I 100.0%; Pred. No. 1.1e-31; Live 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NEDO human cDNA sequencing project
                                                                  /organism="Homo sapiens"
/db_xref="taxon:9606"
       Kazusa DNA Research Institute.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             mRNA
                              Location/Qualifiers
                                                                                                                                       /dev_stage="adult"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1349 g
                                                                                                                 /clone="as00108"
                                                                                                                                                                                                                                                        <1. .653
/gene="FLJ00108"
                                                                                                                                                                                                                                 /gene="FLJ00108"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AK026054.1 GI:10438772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2820 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1323 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                               .4292
                                                                                                                                                                                                              .653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (sites)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AK026054
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AK026054
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    788
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches 279;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Best Local
                                                        source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 947
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AUTHORS
                                                                                                                                                                                                                gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AK026054
                                                                                                                                                                                                                                                           CDS
                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δλ
```

ö

```
PDWFVGVDGLNLCEGGKWKQEVTFDLHPFDAGTDSGFTFSSPNFPTTPPENITMITSQ
KPNHPANSFYYPRLNELPPLATIWVKRQSRLPVRQQNRLSNHILPDASKPHRFSETPL
DCEVSMWSSWGLCFGPCARGGLRHRTRYILLKPANSGSPCPELEEQEECTPHNCLADQ
                                                                  Higashijima, S.
Direct Submission
Submitted (28-JUL-1997) Shin-ichi Higashijima, National Institute
Submitted (28-JUL-1997) Shin-ichi Higashijima, National Institute
for Basic Biology, Division of Morphogenesis; Nishigonaka 38,
Myodaijicho, Okazaki, Aichi 444, Japan (E-mail:shinichi@nibb.ac.jp,
Tel:81-564-55-7572, Fax:81-564-55-7571)
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                    SYIVVFTGHWSPQTFPKQYPLFRPPAÖWSKLMVVTHNBQYRLWQBGAPASDGMKSFAE
QGLTVDLVKDAKEARKRRSVGSMYRTAGIPSGIGHSSTEVLLTPRSPLVSLIVKLIPS
                                                                                                                                                                                                                                                                                                                                                                     /translation="MMSSEILVPGWLQQLLVVLLRFTLSCAALVNSTNGTECSARGPA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   127 gccagagccctggccaaatacagcatcacctgggcaagtggagccagacggccttc 186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               165 GCTCGAGGACCTGCATCTTACATCGTGGTGTTCACCGGACACTGGAGTCCACAGACCTTC 224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             catagetecgaetacageatgtggaggaagaaccagtacgtcagtaacgggetgcgcgae 306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ttctcctccccaacttcgccaccatcccgcaggacacggtgaccgagataacgtcctcc 666
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ctgcagagogtgcacgcggtgttttcggcgcccgccgtccccagcggcaccgggcagacg 426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CGATCG---GTGGGTTCCATGTACCGTACGGCTGGAATCCCGTCTGGCATCGGCCACAGT 461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTCTCCTCTCCAAACTTCCCAACACCTCCGGAAAACATCACCATGATCACCTCTCAA 701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          tcggcggagctggaggtgcagcgcactcgctggtctcgtttgtggtgcgcatcgtg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cccagccccgactggttcgtgggcgtggacagcctggacctgtgcgacggggaccgttgg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCCAGTCCTGACTGGTTTGTGGGGGTTGATGGTCTAAACCTGTGTGAAGGAGGGAAGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ,
6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       23.3%; Score 258; DB 5; Length 3381; 57.1%; Pred. No. 1.3e-28; ive 0; Mismatches 375; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ų
zebrafish embryonic axis
Dev. Biol. 192 (2), 211-227 (1997)
98104230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1012
                                                                                                                                                                                                                                                                                                                               /protein_id="BAA22808.1"
/db_xref="GI:2529221"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note="11 a nucleotides"
713 c 707 g 101
                                                                                                                                                                                                                /organism="Danio rerio"
/db_xref="taxon:7955"
                                                                                                                                                                                                                                                        /dev_stage="embryo"
                                                                                                                                                                                                                                                                                                                 /product="MINDIN1"
                                                                                                                                                                                                                                                                                              /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            al Similarity 57.1%;
512; Conservative
                                                        (bases 1 to 3381)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    949 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                polyA_site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Best Local
                                                                                                                                                                                                       source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                          AUTHORS
                                    MEDLINE
                                                                                                            JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             547
                    JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         522
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   642
                                                                                                                                                                                                                                                                           CDS
                                                                                                                                                                                  FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δy
```

```
815
                                                                                                             846
                                                                                                                                       875
                                                                                                                                                                  906
                                                                                                                                                                                                                        gggaccaagagcaggactcgctacgtccgggtccagcccgccaacaacgggagcccctgc 966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             568
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    cgctgatgaaggagatcgaggcggcggcgggaggcgctgcagagcgtgcacgcggtgtttt 391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      59 CGCTGATGAAGGAGTCAAGGCGGCGGGGGAGGCGTGCAGAG-GTGCACGAGGTGTTT 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  118 CGCCCCCG-GINNCCCAGCGNCACCNGGCAGACGICGGCGAACTGGNAGGIGCAGCGCA 176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   cggcgcccgccgtccccagcggcaccgggcagacgtcggcggaggtgcagcgca 451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                              29-SEP-1999
                                                                                                                                                                                                                                                                          967 cccgagctcgaagaagaggctgagtgcgtcctgataactgcgtctaagaccagag 1022
                                                                                                                                                                                                                                                                                                      996 CCCGAGCTGGAGGAACAGGAGGAGTGCACACCGCCACAACTGCCTGGCAGATCAGTG 1051
                                                                                                                                                                  gactgcgaggtctccctgtggtcgtcctggggactgtgcggaggccactgtgggaggctc
                                                                                                                                                                                 667 teteccagecacceggecaacteettetactaccegeggetgaaggeeetgeeteevate
                                                     727 gccagggtgacactggtgcggctgcgacagagccccagggccttcatcctcccgcccca
                                                                               -----GGCAACCATATGGGTGAAACGACAGTCCCGCTTGCCTGTCCGTCAACAGAACCGG
                                                                                                          787 gtcctgcccagcagggacaatgagattgtagacagcgcctcagttccagaaacgccgctg
                                                                                                                                    816 CTGTCCAATCACATCCTACCAGACGCAAGCAAACCTCACAGGTTTTCAGAAACGCCGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ggcactcgctggtctcgtttgtggtgcgcatcgtgcccagccccgactggttcgtgggcg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   tggacagectggace---tgtgggacggggaccgttggcgggaacaggcggcgctggacc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Nucleic acids encoding human neuronal attachment factor-1
Patent: US 5871969-A 16 16-FEB-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 316;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    15
                                                                                                                                                                                                                                                                                                                                                                            PAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  39;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pred. No. 4e-20;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ų
                                                                                                                                                                                                                                                                                                                                                                         AR035967 316 bp DNA
Sequence 16 from patent US 5871969.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 202.6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /organism="unknown"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    120 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 (bases 1 to 316)
Hastings, G. and Dillon, P.J.
                                                                                                                                                                                                                                                                                                                                                                                                                   GI:5952635
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     297 TGTANCCCTACGACGNCGGG 316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        18.3%;
85.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  84 C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        tgtacccctacgacgccggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Best Local Similarity 85.6
Matches 274; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Unclassified
                                                                                                                                                                                                                                                                                                                                                                                                                  AR035967.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  48 a
                                                                                                                                                                                                                                                                                                                                                                                                      AR035967
                                                                                                                                                                                                                                                                                                                                                                                                                                             Unknown.
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         source
                                                                                                                                                                                                                                                                                                                                                 13
                                                                                                                                                                                                                                                                                                                                                                                      DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BASE COUNT
                                                                                191
                                                                                                                                                               847
                                                                                                                                                                                                                      206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   512
                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
                                                                                                                                                                                                                                                                                                                                                            AR035967
                                                                                                                                                                                                                                                                                                                                                                                                                                KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                  VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
                                                                                                                                                                                                                                                                                                                                               RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                             SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORIGIN
                                                                                                                                                                                                                                                                                                                                                                           COCUS
                     В
                                                                                                                                    g
                                                     ò
                                                                             g
                                                                                                         ò
                                                                                                                                                              òχ
                                                                                                                                                                                        qq
                                                                                                                                                                                                                      Qγ
                                                                                                                                                                                                                                            .P
                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               qq
```

ŝ

```
AUTHORS
                                                                                                                                                                                                              CDS
                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               õ
                                                                                                                                                                                                                                                                                                                                                        ď,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Muscomorpha; Ephydroidea; Drosophilidae; Brachycera; Unescia; Brachycera; Brachin, and Nose, A. M. Spondin, a novel ECM protein highly homologous to vertebrate Frspondin, is localized at the muscle attachment sites in the prosphila embryo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CGGCGCCCG-GINNCCCAGCGNCACCNGGCAGACGTCGCCGAACTGGNAGGTGCAGCGCA 176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 tggacagcctggacc---tgtgcgacggggaccgttggcgggaacaggcggcgctggacc 568
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      332 cgctgatgaaggagatcgaggcggcggggggggggcgctgcagagcgtgcacgcggtgtttt 391
                                                                                                                                                                                                                                                                                                                                                                                                                                                           392 eggegecegecgtececageggeacegggeagaegteggeggagetggaggtgeagegea 451
                                                                                                                                                                                                                                                                                                                                                                                     272 ggaagaaccagtacgtcagtaacgggctgcgcgactttgcggagcgcgggggggcctggg 331
                                                                                                                                                                                                                                                                                                                                                                                                       08-MAY-2001
                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Drosophila melanogaster M·spondin (mspo) mRNA, complete cds
                                                                                                                                                                    1 (bases 1 to 316)
Hastings, G. and Dillon, P.J.
Nucleic acids encoding human neuronal attachment factor-1
Patent: US 5871969-A 17 16-FEB-1999;
                                                                                                                                                                                                                                                                                                                                                        7;
                                                                                                                                                                                                                                                                                                                             Length 316;
                                                                                                                                                                                                                                                                        others
                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ΙΝ
                                                                                                                                                                                                                                                                                                                               18.3%; Score 202.6; DB 6; 85.6%; Pred. No. 4e-20;
                                                                                                                                                                                                                                                                                                                                                        39;
                                                                                                                                                                                                                                                                        ų
                                                                                                                                                                                                                                                                                                                                                        0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Dev. Biol. 186 (2), 165-176 (1997) 97349133
                                                                    5871969
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           mRNA
                                                                                                                                                                                                                             Location/Qualifiers
                                                                                                                                                                                                                                                       /organism="unknown"
                                                                                                                                                                                                                                                                      120 g
                                                                     Sequence 17 from patent US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 fruit fly.
Drosophila melanogaster
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          297 TGTANCCCTACGACGNCGGG 316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          569 tgtacccctacgacgccggg 588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AF000178.1 GI:2130612
                                                                                                 AR035968.1 GI:5952636
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2565 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (bases 1 to 2565)
                                                         316 bp
                                                                                                                                                                                                                                                                      84 c
                                                                                                                                                                                                                                                                                                                                                           Matches 274; Conservative
                                                                                                                                                                                                                                             .316
                                                                                                                                                        Unclassified.
                                                                                                                                                                                                                                                                                                                                             Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DMAF000178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AF000178
                                                         AR035968
                                                                                                                              Unknown.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9205137
                                                                                                                                              Unknown.
                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                               Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 15
DMAF000178
LOCUS
                                                                                                                                                                                                                                                source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE
PUBMED
                                                                        DEFINITION
                                                                                                                                                                                                                                                                        BASE COUNT
                             RESULT 14
                                                                                                                                              ORGANISM
                                                                                                                                                                                                TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
                                                                                      ACCESSION
                                                                                                                KEYWORDS
                                                                                                                                                                       REFERENCE
                                                                                                                                                                                        AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KEYWORDS
                                            AR035968
                                                                                                                                                                                                                              FEATURES
                                                                                                    VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SOURCE
                                                                                                                                                                                                                                                                                       RIGIN
                                                            rocus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ģ
                                                                                                                                                                                                                                                                                                                                                                                                                                                 õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
```

```
PPATQUAR POTGCTLORLAVYK KVYLHTYWTRELFPKHY PDWRPTAGNTKTLGRTHNANY
ALVHIGQPATAAV KOFAESGRTDLLDSNAGEQQVQWOLQSQWQAGK SPSGGISSGTT
SFNATAASTATPTGGSGGSGGSGVTTTAERSKYPDFSRWFILDMGTADGAGRERQVYDS
HISLVSLAMRT IV PSPDWFT 12 VDSFFLCTTAERSKYPDFSRWFILDMGTBTGFTAPRW
PTAPQGYLYRTISYPSTGHPAGSFYPKSKRLPPIATPGFIKKKFYELSEUSBYFNTAEDN
KYFTVQTQTHLDAEHNHVEMNNELSASIERERQTEQQQLQQNDDERQRIRSQLLAKWN
FITGSNNSLQAAPGGVVSVVPKNDKTHIQSIASSYRRAADASDANASKPTPSAIGG
RAGGAQGGGAATRRRSSAQRRDCRVSHWSEWTACSKSCGVGEMHRYRKVIKHGKRG
RQCAALQQSKWGGTRNNHGSQTYFNWSDSDT"

679 C 677 9 520 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /product="M-spondin"
/protein_id="AAB58341.1"
/protein_id="AAB58341.1"
/protein_id="2130611.1"
/protein_id="AG1:2130611.1"
/translation="MAATPWTPFPAHWILCILLALGSLSSKANAVSAYGASFISNPSI
YYSVENQPDERESRDNNIKFAAEHGNLNSNSNLNRNYYYTDDPSPVPNMNPTASLAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             expressed by somatic body wall muscles; localized at the muscle attachment site in late embryos"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1327 ACCTTCACGGCGCCCCAACTGGCCAACAGCACCTCAGGGCGTCATCTATCGGATCACCTCG 1386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1267 TGGATCGATACGGTGACCGTTGAGCTGGATCCTTTGGATGCGGCCACGGATAATGGGTTC 1326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1087 GCCGAGCGCAGCGTGTTCGATGAGTTCAGCATGCCGGCGATTCCGATGGGCGCCCGGACGC 1146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note="F-spondin-related ECM protein; secreted protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         424 acgtcggcggagctggaggtgcagcgcactcgctggtctcgttgtggtgcgcatc 483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           484 gigcccagccccgaciggitcgigggcgiggacagcciggaccigiggaccgic 543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                664 tecteteceagecaeceggecaactecttetactaceggeggetgaaggeetgeeteee 723
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 604 accttctcctccccaacttcgccaccatccgcaggacacggtgaccgaggtaacgtcc 663
Umemiya,T., Takeichi,M. and Nose,A.
Direct Submission
Submitted (17-APR-1997) Behavior and Neurobiology, National
Institute for Basic Biology, Myodaiji-cho, Okazaki, Aichi Pref.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           364 gegetgeagagegtgeaegeggtgtttteggegeeegeegteeecageggeaeegggeag 423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   10.7%; Score 118.2; DB 3; Length 2565; 56.6%; Pred. No. 2.1e-08; tive 0; Mismatches 168; Indels 0;
                                                                                                                                                                                                                                                                                                                                                    /dev_stage="9-12 hr or 13-16 hr AEL embryos"
                                                                                                                                                                              1. .2565
/organism="Drosophila melanogaster'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /db_xref="taxon:7227"
/chromosome="2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             724 atcgccagggtgacactggtgcggctg 750
                                                                                                                                                                                                                                                                                                                         /map="51C; polytene"
                                                                                                                                                Location/Qualifiers
                                                                                                                                                                                                                                      /strain="Canton S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                           /gene="mspo"
346. .2142
/gene="mspo"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches 219; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Best Local Similarity
                                                                                                                          444, Japan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              689
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                        sonrce
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BASE COUNT
                                 TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                      gene
```

ö

Search completed: December 10, 2001, 19:46:49 Job time: 22163 sec

ŀ

```
(without alignments) 5774.378 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 cgctgctcctgccgggtgat......tgcaggcggccgagggcaca 1105
                                                                                                                                                                                                                                                                  ; Search time 164.06 Seconds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   N_Geneseq_1101:*

| SIDSB/gcgdata/geneseqn/NA1980.DAT:*
| SIDSB/gcgdata/geneseqn/NA1981.DAT:*
| SIDSB/gcgdata/geneseqn/NA1981.DAT:*
| SIDSB/gcgdata/geneseqn/NA1982.DAT:*
| SIDSB/gcgdata/geneseqn/NA1983.DAT:*
| SIDSB/gcgdata/geneseqn/NA1984.DAT:*
| SIDSB/gcgdata/geneseqn/NA1986.DAT:*
| SIDSB/gcgdata/geneseqn/NA1986.DAT:*
| SIDSB/gcgdata/geneseqn/NA1986.DAT:*
| SIDSB/gcgdata/geneseqn/NA1989.DAT:*
| SIDSB/gcgdata/geneseqn/NA1989.DAT:*
| SIDSB/gcgdata/geneseqn/NA1989.DAT:*
| SIDSB/gcgdata/geneseqn/geneseqn/NA1991.DAT:*
| SIDSB/gcgdata/geneseqn/geneseqn/NA1991.DAT:*
| SIDSB/gcgdata/geneseqn/geneseqn/NA1991.DAT:*
| SIDSB/gcgdata/geneseqn/geneseqn/NA1991.DAT:*
| SIDSB/gcgdata/geneseqn/geneseqn/NA1991.DAT:*
| SIDSB/gcgdata/geneseqn/geneseqn/NA1991.DAT:*
| SIDSB/gcgdata/geneseqn/geneseqn/NA1995.DAT:*
| SIDSB/gcgdata/geneseqn/geneseqn/NA1995.DAT:*
| SIDSB/gcgdata/geneseqn/geneseqn/NA1995.DAT:*
| SIDSB/gcgdata/geneseqn/geneseqn/NA1999.DAT:*
| SIDSB/gcgdata/geneseqn/RA1999.DAT:*
| SIDSB/gcgdata/geneseqn/RA1999.DAT:*
| SIDSB/gcgdata/geneseqn/RA1999.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1861242
4.5
Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        al number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         930621 seqs, 428662619 residues
GenCore version
Copyright (c) 1993 - 2000
                                                                                                                                                                                                                                                              December 10, 2001, 13:37:26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Post-processing: Minimum Match 08
Maximum Match 1008
Listing first 45 summaries
                                                                                                                                                                      OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Minimum DB seq length: 0 Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                        US-09-170-042A-1
1105
                                                                                                                                                                                                                                                                                                                                                                                                                                        Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         arched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Database
                                                                                                                                                                                                                                                              Run on:
```

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

prote cDNA Cancer specific ge Human colon cancer cDNA encoding an a Human extracellula Human neuronal att Human extracellula Human PRO866 nucle (UNQ4 Human NAF-1 DNA. Human PRO866 (Human PRO866 p Human PRO866 c Description SUMMARIES AAV63241 AAF90567 AAF90566 AAZ34089 AAC78507 AAC58630 AAA49728 AAX02019 AAZ95034 AAH34981 221 221 221 221 221 221 221 221 231 Length DB 1840 1848 1770 1846 1847 1847 1847 Match Query 1098.6 1098.6 1098.6 1098.6 1098.6 1100.2 1100 Score 1105 1098.6 4 7 7 9 9 110 Result Š

97US-0799173.

12-FEB-1997;

Human polynucleoti Human polynucleoti Human secreted pro Human secreted pro Deglerate sequence Nucleotide sequence Nucleotide sequence Human NAF-1 DNA ho Human NAF-1 DNA ho Human NAF-1 DNA ho EST sequence encod Human NAF-1 DNA ho Human NAF-1 DNA ho EST sequence encod Human NAF-1 DNA ho EST sequence encod Human Colorectal c EST sequence encod Human vascular smo Human vascular smo Human vascular smo Human ovarian canc Human secular smoot F-spondin coding s Human neuronal att Human secreted pro	
AAL59814 AAC59814 AAC59794 AAC59794 AAV72537 AAV72537 AAV63258 AAV63270 AAV63270 AAV63270 AAV63270 AAV63270 AAV63266 AAX602025 AAV63267 AAV63266 AAX602025 AAV63266 AAX602025 AAV63266 AAX60205 AAV63266 AAX60205 AAV63266 AAX60205 AAX80093 AAF94993 AAF94993 AAF94993 AAF94993 AAX80093	AAC59794 AAI59814
22222222222222222222222222222222222222	22
1926 1991 1991 1991 1991 1993 1993 1993 199	1718 1926
99999749999999999999999999999999999999	5.2
1098.6 1098.6 1098.6 1088.2 1088.2 1088.2 1088.2 1088.3 1088.4 1088.4 1088.4 1070.2 10	57
11111111111111111111111111111111111111	4 4 5
0 0000	ŭ

ALIGNMENTS

```
NAF-1; neuronal attachment factor-1; F-spondin analogue; treatment; spinal cord injury; peripheral nerves damage; neural cell adhesion; neurite extension; tunmour cell metastasis; inhibitor; mobility; disease; endothelial cell proliferation; tumour neovascularisation; haemostasis; anglostatic agent; wound healing; diagnostic; neurotrophic; anticancer; antimetastatic; anti-anglogenic; antimalarial; human; ss.
                                                                                                                                                                                                            Location/Qualifiers
                                                                                                                                                                                                                                        /product= "NAF-1"
19..87
                   AXX02019 standard; DNA; 1105
                                                                                                                                                                                                                                                                  /*tag= b
88..1011
                                                               (first entry)
                                                                                                                                                                                                                                   Q
                                                                                                                                                                                                                       19..1014
                                                                                                                                                                                                                                   /*tag=
                                                                                                                                                                                                                                                                                         /*tag=
                                                                                    Human NAF-1 DNA
                                                              21-APR-1999
                                                                                                                                                                                       Homo sapiens
                                                                                                                                                                                                                                                        sig_peptide
                                                                                                                                                                                                                                                                            mat_peptide
                                                                                                                                                                                                                                                                                                              US5871969-A
                                                                                                                                                                                                                                                                                                                                   16-FEB-1999
                                         AAX02019;
          AAX0201
RESULT
```

```
;
                                                                                                                                                                                                                                                                                                                           This sequence encodes a novel human neuronal attachment factor-1, NAF-1. NAF-1 is an analogue of rat F-spondin and is used to treat spinal cord injuries and damage to peripheral nerves (by promoting neural cell adhesion and neurite extension), to inhibit tumor cell metastasis (particularly in small cell and breast carcinoma) and endothelial cell proliferation, adhesion and mobility, to reduce tumor neovascularisation, as angiostatic agents for tumor cells, to promote wound healing and to modulate hemostasis. NAF-1 may also be used to identify treatments and diagnoses for human disease. Fragments of the nucleic acid that do not encode NAF-1 peptides are useful as probes to isolate the NAF-1 gene, its allelic variants, full-length cDNA or related sequences, in chromosomal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             diagnostic probes or primers. The protein has neurotrophic, anticancer, antimetastatic, anti-angiogenic, antimalarial and modulates adhesion, proliferation and mobility of cells.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          tgcgctctcctcctggccactctcggcgccgccggccgccagcctcttgggggagagtccatc 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   cagacgtcggcggagctggaggtgcagcgcagcactcgctggtctcgtttgtggtgcgc 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61 tgcgctctcctcctggccactctcggcgccgccggccagcctcttggggggagagtccatc 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    tgttccgccagagccctggccaaatacagcatcaccttcacgggcaagtggagccagacg 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Nucleic acid encoding human neuronal attachment factor-1 - used to e.g. treat spinal cord injuries, and inhibit tumor cell metastasis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             tgttccgccagagccctggccaaatacagcatcaccttcacgggcaagtggagccagacg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gccttccccaagcagtaccccctgttccgccccctgcccagtggtcttcgctgctggggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               geogogoatageteogaetacageatgtggaggaagaaeceagtaegteagtaaegggetg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               cycyactttycygaycycygycyayycctygygcyctyatyaagyaatcyayyyyyyy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gaggogctgcagagogtgcacgcggtgtttcggccccgccgtccccagcgggaccggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            cagacgtcggcggagctggaggtgcagcaggcactcgctggtctcgtttgtggtggcgc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         location by in situ hybridization or in Northern blotting, and as
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gccttccccaagcagtacccctgttccgccccctgcccagtggtcttcgctgctgggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gccgcgcatagctccgactacagcatgtggaggaagaaccagtacgtcagtaacgggctg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gaggegetgeagagegtgeacgeggtgtttteggegeeegeegteeceagegggaaceggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         100.0%; Score 1105; DB 20; Length 1105; 100.0%; Pred. No. 3.4e-197; Live 0; Mismatches 0; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 1105 BP; 178 A; 393 C; 362 G; 172 T; 0 other;
                                                                                                                                                                                                                                                                                        Claim 2; Fig 1; 29pp; English.
                                                          (HUMA-) HUMAN GENOME SCI INC
96US-0011519
                     97US-0799173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                     Dillon PJ, Hastings G;
                                                                                                                                                                                                                                                 neovascularization
                                                                                                                                            WPI; 1999-166644/14.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Local Similarity
Matches 1105; Conserv
                                                                                                                                                                 P-PSDB; AAW92460
12-FEB-1996;
                   12-FEB-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            481
888888888888888888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        οχ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ογ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
```

```
ccctgccccgagctcgaagaagaggctgagtgcgtcctgataactgcgtctaagaccag 1020
                                                                                                                                                                                                                                                                                                                                                                                                                                 1021 agccccgcagcccctggggcccccggaagccatggggtgtcggggggtcctgtgcaggct 1080
                                                                                                                                                                                                                                                                                                                                                                                             961 ccctgccccgagctcgaagaagaggctgagtgcgtccctgataactgcgtctaagaccag 1020
                                             900
                                                                      999
                                                                                                                      720
                                                                                                                                               720
                                                                                                                                                                                             780
                                                                                                                                                                                                                      840
                                                                                                                                                                                                                                             840
                                                                                                                                                                                                                                                                     900
                                                                                                                                                                                                                                                                                                                                 601 ticaccticicciccicaacticgccaccatcccgcaggacacggtgaccgaggataacg 660
                                                                                                                                                                      cccatcgccagggtgacactggtgcggctgcgacagagccccaggggccttcatcctccc 780
                                                                                                                                                                                                                                                                                            841 ccgctggactgcgaggtctccctgtggtcgtcctggggactgtgcggaggccactgtggg 900
                                                                                                                                                                                                                                                                                                                      aggetegggaceaagageaggaetegetaegteegggteeageeegeeaaeaaegggage 960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Neuronal attachment factor-1; NAF-1; human; cell-cell interaction; cell adhesion; spinal cord injury; peripheral nerve damage; tumour; metastasis; gene therapy; malaria; wound healing; ss.
                                                                                                                                                                                                                                                                     841 ccgctggactgcgaggtctccctgtggtcgtcctggggactgtgcggaggccactgtggg
481 atcgtycccayccccyactygttcgtygygcytygacaycctygacctygaccygygac
                       541 cgttggcgggaacaggcggcgctggacctgtacccctacgacgccgggacagcggc
                                                                        ttcaccttctcctcccccaacttcgccaccatcccgcaggacacggtgaccgagataacg
                                                                                                                       tectecteteccagecaceeggecaaetecttetaetaecegeggetgaaggeeetgeet
                                                                                                                                   781 geceeagteetgeceageagggaeaatgagattgtagaeagegeeteagtteeagaaaeg
                                                                                                                                                                                                                                  Human neuronal attachment factor-1 DNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1081 catgctgcaggcggccgagggcaca 1105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
19..1014
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1081 catgctgcaggcggccgagggcaca 1105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAT78360 standard; DNA; 1105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               96WO-US01857
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 19..87
/*tag= b
88..1011
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               12-FEB-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WO97.29189-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         08-MAR-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    sig_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            mat_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAT78360;
                                                                                                                                                                       721
                                                                                                                                                                                                721
                                                                                                                                                                                                                                              781
                                                                                                                                                                                                                                                                                                                      901
                                                                        109
                                                                                                                      199
                                                                                                                                                                                                                                                                                                                                                                     196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAT78360
                       ŏ
                                             qq
                                                                      Qγ
                                                                                           QQ
                                                                                                                      Qγ
                                                                                                                                        òb
                                                                                                                                                              · ŏ
                                                                                                                                                                                          g
                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                          qq
                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                     QΫ́
                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                     ος
10-00
                                                                                                                                                                                                                                                                                                                                                                                                                  δý
                                                                                                                                                                                                                                                                                                                                                                                                                                          QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                            ·δ
```

This DNA sequence codes for novel human neuronal attachment factor-1 (NAF-1) (see AAW23663), a protein that promotes cell-cell interaction and cell adhesion. It was isolated from a cDNA library derived from human epithelial sarcoma. NAF-1 DNA can be used in the production of recombinant NAF-1 polypeptides (especially the mature protein), in gene therapy methods for treatment of a patient having need of NAF-1, and in the diagnosis of a disease or a susceptibility to a disease related to an under-expression of NAF-1 cresulting from gene mutation. NAF-1 can be used e.g. to treat spinal cord injuries or damage to peripheral nerves by promoting central cell adhesion and neurite extension, to inhibit tumour cell metastases, inhibit endothelial cell proliferation, adhesion and metastases, inhibit endothelial cell proliferation, dhesion and motifity, to decrease tumour neovascularisation, to be anglostatic for tumours and to promote wound healing. It can also be used to New isolated human neuronal attachment factor-1 - promotes cell-cell interaction and cell adhesion, used for treating e.g. spinal cord injury, peripheral nerve damage or tumours Claim 5; Page 42-43; 55pp; English (HUMA-) HUMAN GENOME SCI INC 96WO-US01857 WPI; 1997-415344/38 P-PSDB; AAW23663 12-FEB-1996; Hastings OF 888888888888888

Sequence 1105 BP; 178 A; 392 C; 363 G; 172 T; 0 other;

for tumours and to promote wound healing. It can also be used t modulate haemostasis. Antagonists can be used to treat malaria.

ó 300 tgttccgccagagccctggccaaatacagcatcaccttcacgggcaagtggagccagacg 180 gccgcgcatagctccgactacagcatgtggaggaagaaccagtacgtcagtaacgggctg 300 gaggogctgcagagcgtgcacgcggtgttttcggcgcccgccgtccccagcggcaccggg 420 cagacgtcggcggagctggaggtgcagcgcaggcactcgctggtctgttgtggtgcgc 480 tgttccgccagagccctggccaaatacagcatcaccttcacgggcaagtggagccagacg 180 cgcgactttgcggagcgggggggggggggggggtgatgaaggagatcgaggcgggggg 360 cagacgtcggcggagctggaggtgcagcgcagtcactcgctggtctcgtttgtggtgcgc 480 Gaps 1 egetgetectgecgggtgatggaaaaceceageeeggeegeegeetggggeaaggeeete 60 1 cgctgctcctgccgggtgatggaaaaccccagcccggccgccgcctgggcaaggccctc 60 gccttccccaagcagtaccccctgttccgccccctgcccagtggtcttcgctgctgggg gccgcgcatagctccgactacagcatgtggaggaagaaccagtacgtcagtaacgggctg geetteeceaageagtaceectgtteegeeectgegeagtggtettegetggggg cgcgactttgcggagcgcggcgaggcctgggcgctgatgaaggagatcgaggcggcgggg gaggogetgeagagegtgeacgeggetgtttteggegecegecegteeceageggeaceggg 99.6%; Score 1100.2; DB 18; Length 1105; 99.7%; Pred. No. 2.7e-196; Live 0; Mismatches 3; Indels 0; Best Local Similarity 99.7 Matthes 1102; Conservative Query Match 61 181 241 301 61 121 181 301 361 361 421 481 421 ò g ò g δ g Ω g ò g ò g ò g ó

ategtgeccagecccgactggttcgtgggcgtggacagectggacctgtgcgacggggac 540

1020 agccccgcagccctggggcccccgggagccatggggtgtcggggggctcctgtgcaggct 1080 1021 agccccgcagcccctggggccccccggagccatggggtgtcggggggctcctgtgcaggct 1080 Cancer specific gene Pro108 cDNA useful as prostate cancer marker. Cancer specific gene; CSG; prostate cancer; diagnosis; monitoring; staging; imaging; metastasis; therapy; human; Pro108; ss. ccctgccccgagctcgaagaagactgagtgcgtccctgataactgcgtctaagaccag cgttggcgggaacaggcggcgctggacctgtacccctacgacgccgggacagcagcggc ttcaccttctcctcccccaacttcgccaccatcccgcaggacacggtgaccgagataacg tectecteteceagecacceggecaactecttetactaccegeggetgaaggeeetgeet cccategeccagggtgacactggtgeggetgegacagageecccaggggeetteateecteee gececagtectgeccagcagggacaatgagattgtagacagegeetcagttecagaaaeg gococagtcotcgccagcagggacaatgagattgtagacagcgcctcagttccagaaacg ccgctggactgcgaggtctccctgtggtcgtcgtcggggactgtgcgaggccactgtggg 841 ccgctggactgcgaggtctccctgtggtcgtcctgggggactgtgcggaggccactgtggg aggetegggaeceaagagcaggaetegetaegteegggteeageeeggeeaeaaegggaage tteacettetectececeaacttegecaceatecegeaggaeaeggtgaeegagataaeg Cafferkey R; Recipon H, 1081 catgctgcaggcggccgagggcaca 1105 Location/Qualifiers 299..1294 1081 catgctgcaggcggccgagggcaca 1105 AAZ95034 standard; cDNA; 1840 BP 99WO-US23764. Salceda S, 98US-0104741 15-AUG-2000 (first entry) (DIAD-) DIADEXUS LLC Sun X, WO200023108-A1 Homo sapiens 19-OCT-1998; 18-OCT-1999; 27-APR-2000 AAZ95034; Ali SM, 541 601 601 199 199 721 781 781 841 901 196 1021 AAZ95034 셤 g δý g qq g q ΩŊ δŏ ò ò ò ŏ à

```
ó;
                                                                                                                                                             The present sequence is that of a cancer specific gene (CSG) designated prol08. The CSG was identified using a suppression subtractive hybridization method. It is a diagnostic marker for prostate cancer. In 11 different healthy tissues examined, prol08 mRNA expression was highest in ovary and uterus. Expression in healthy prostate was low. However, overexpression of CSG prol08 was observed in 13 of 13 prostate cancer tissues examined. CSGs comprising prol08, its encoded polypeptide (see AAY79561), or an antibody that specifically binds CSG, are used in claimed methods for the diagnosis, detection, staging, monitoring, imaging and treatment of prostate cancer. The new methods provide earlier diagnosis for the presence and metastasis of prostate cancer, and can be used to determine if a cancer has metastasized, or to
                                  unagnosing, detecting, staging, monitoring, imaging and treating cancers, especially useful for detecting prostate cancer comprises measuring changes in levels of cancer specific genes in cells, tissues and body fluids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      tgcgctctcctcctggccactctcggcgccgccggccgccactcttgggggagagtccatc 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gccgcgcatagctccgactacagcatgtggaggaagaaccagtacgtcagtaacgggctg 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gaggogotgoagagogtgoacgaggtgttttcggocgcccgccgtccccagcggcaccggg 700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    cagacgicggcggagctggaggigcagcgcaggcactcgctggitctcgttigtggigcgc 760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      atcgtgcccagccccgactggttcgtgggcgtggacagcctggacctgtgcgacggggac 820
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  tgcgctctcctcctggccactctcggcgccgccggccagcctcttgggggagagtccatc 400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   cgctgctcctgccgggtgatggaaaaccccagcccggccgccctcgggcaaggccctc 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gccttccccaagcagtacccctgttccgcccctgcccagtggtcttcgctgctgggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cagacgtcggcggagctggaggtgcagcaggcactcgctggtctcgtttgtgggtgcgc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   tgttccgccagagccctggccaaatacagcatcacctgggcaagtggagccagacg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gocttococaagcagtaccccctgttccgccccctgcgcagtggtcttcgctgctgggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        atcgtgcccagccccgactggttcgtgggcgtggacagcctggacctgtgcgacggggac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 21; Length 1840;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 1840 BP; 305 A; 628 C; 582 G; 325 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               99.6%; Score 1100.2; DB 21
99.7%; Pred. No. 2.7e-196;
iive 0; Mismatches 3;
                                                                                                                                 Claim 6; Page 28-29; 35pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
2000-339528/29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
               P-PSDB; AAY79561
                                                                                                                                                                                                                                                                                                                                                                                                   metastasized
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches 1102;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   _
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q
S \times S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                용
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
```

```
Nucleic acids encoding 4277 human colon cancer-associated polypeptides, useful for preventing, diagnosing and/or treating colorectal cancers -
                                                                                                                                                                        1120
                                                                                                                                                                                                                                                            1020
                                                                                                                                                                                                                                                                                                                                                             1021 agccccgcagcccctggggcccccggagccatggggtgtcggggggttcctgtgcaggct 1080
                                                            1121 ccgctggactgcgaggtctccctgtggtcgtcctggggactgtgcggaggccactgtggg 1180
                                                                                                                                                                                                                                                                                                                       1241 ccctgccccgagctcgaagaagaggctgagtgcgtccctgataactgcgtctaagaccag 1300
                                                                                                                                                840
                                                tectecteteceagecaceggecaactecttetactacegggggggggagggeetgeet 720
                                                                                                                                                              cogctggactgcgaggtctccctgtggtcgtcctggggactgtgcggaggccactgtggg
                        ttcaccttctccccccaacttcgccaccatcccgcaggacacggtgaccgagataacg
                                                                                                   cccatcgccagggtgacactggtgcggctgcgacagagccccagggccttcatcctccc
                                                                                                                ccctgccccgagctcgaagaagaggctgagtgcgtccctgataactgcgtctaagaccag
 ttcaccttctccccccaacttcgccaccatcccgcaggacacggtgaccgagataacg
                                                                                                                                                  gececagteetgeecageagggaeaatgagattgtagaeagegeeteagtteeagaaaeg
                                                                                                                                                                                                                                                  aggetegggaceaagageagtegetacgteegggteeageeegaeaeaagggage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   cancer; colon cancer antigen; diagnosis; detection;
                                                                                                                                                                                                                                                                                                             Human colon cancer antigen encoding cDNA SEQ ID NO: 2063
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Rosen CA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Claim 1; Page 3549; 9803pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                 1081 catgetgeaggeggeegaggeaca 1105
                                                                                                                                                                                                                                                                                                                                                                                                                        1361 catgctgcaggcggccgagggcaca 1385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Birse CE,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAH34981 standard; cDNA; 1848
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (HUMA-) HUMAN GENOME SCI INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              28-SEP-2000; 2000WO-US26524.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     99US-0157137.
99US-0163280.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               colorectal carcinoma; ss
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Barash SC,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 2001-235357/24.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        P-PSDB; AAG75576
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WO200122920-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     colon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      29-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   03-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    03-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        05-APR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ruben SM,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAH34981;
                                                                                                                                                                                                 841
                        881
                                                661
                                                                                                 721
                                                                                                                                                 781
                                                                                                                                                                                                                                                901
601
                                                                                                                                                                                                                                                                                                196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAH34981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ρp
                                                ōλ
                                                                     qq
                                                                                               Ωÿ
                                                                                                                      Op
                                                                                                                                                QΥ
                                                                                                                                                                   셤
                                                                                                                                                                                              QΥ
                                                                                                                                                                                                                     Db
                                                                                                                                                                                                                                               Ω
                                                                                                                                                                                                                                                                   q
                                                                                                                                                                                                                                                                                               Ω
                                                                                                                                                                                                                                                                                                                      d
                                                                                                                                                                                                                                                                                                                                             Ω
                                                                                                                                                                                                                                                                                                                                                                      Op
                                                                                                                                                                                                                                                                                                                                                                                                 Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                       Db
```

888888888888888888888888

cancer-associated nucleic acid molecules (N) and proteins (P), where the proteins are collectively known as colon cancer antigens. The colon cancer antigens. The colon cancer antigens. The colon cancer antigens. The colon cancer antigens have cytostatic activity and cancer antigens. The colon cancer antigens have cytostatic activity and cancer uniques. The colon cancer antigens have cytostatic activity and cancer unique production. N and P may be used in the prevention, diagnosis and treatment of diseases associated with inappropriate P expression. For example, N and P may be used to treat disorders associated with decreased expression by rectifying mutations or deletions in a patient's genome that affect the activity of P by expressing inactive proteins or to supplement the patients own production of P. Additionally, N may be used to produce the colon cancer-associated Ps, by inserting the nucleic acids into a host cell and culturing the cell to express the proteins. N and P can be used in the prevention, diagnosis and treatment of colorectal carcinomas and cancers. AAH37196 to AAH37204 256 egetgetectgeegggtgatggaaaaccecageeeggeegeegtegggeaaggeeete 315 tgcgctctcctcctggccactctcggcgccggccggccagcctcttggggggagagtccatc 120 tgcgctctcctcctggccactctcggcgccggccagcctcttggggggagatccatc 375 tgttccgccagagccctggccaaatacagcatcaccttcacgggcaagtggagccagacg 180 gccgcgcatagctccgactacagcatgtggaggaagaaccagtacgtcagtaacgggctg 300 1 cgctgctcctgccgggtgatggaaaaccccagcccggccgccgcctgggcaaggccctc 60 cgcgactttgcggagcgcgggaggcctgggcggcctgatgaaggagatcgaggcgggggg gccgccatagctccgactacagcatgtggaggaagaaccagtacgtcagtaacgggctg 556 cgcgactttgcggagcgcggcgaggcctgggcgctgatgaaggagatcgaggcgggggg present invention.

When Pages 66 to 682 and page 7053 of the sequence listing were missing at time of publication, meaning no sequences are present SEQ ID NO:1027 to 1052, 7921 and 7922. 0; Length 1848; Indels Sequence 1848 BP; 324 A; 601 C; 578 G; 340 T; 5 other; Score 1100; DB 22; Pred. No. 2.9e-196; 2; Mismatches 3; 2; 99.5%; Matches 1100; Conservative Best Local Similarity Query Match 376 436 • 61 316 121 496 361 181

q ð 셤 q

ŏ

g ò qq

ð

/*tag= immune deficiency etc. WPI; 1998-557522/47. P-PSDB; AAW70589 Homo sapiens WO9845442-A2 10-APR-1998; 11-JUN-1997; 10-APR-1997; 21-JAN-1999 Sheppard PO; 15-0CT-1998 AAV63241; 196 AAV63241 RESULT qq ρp g δ qq ò ò δ Qγ ö treacettetectececeaaettegecaceatecegeaggacaeggtgacegagataaeg 915 cagacgtcggcggagctggaggtgcagcgcaggcactcgctggtctcqtttqtgqtqcqc 480 tectecteteceagecaceoggecaacteettetactaceoggeggetgaaggeeetgeet 720 Gaps for ttcaccttctcctcccccaacttcgccaccatcccgcaggacacggtgaccgagataacg 616 gaggogotgcagagogtgcacgmggtgttttcggcgcccgccgtccccagcggcaccggg atcgtgcccagccccgactggttcgtgggcgtggacagcctggacctgtgcgacggggac

736

541

928 199

g

481

421

δ

g ŏ g ò QQ ογ

δ q

B

```
zsig25; adhesion-modulating protein; prostate cell; prostatic carcinoma; B-cell cancer; infertility; Wolf-Hirschhorn syndrome; chromosome 4 (p16.3); ss.
                                                                                                                                                                                     1095
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          New zsig25 protein and related nucleic acid, fusion proteins, vectors, transformed cells - and antibodies, involved in modulation of adhesion, used for diagnosis and treatment of prostatic and 9-cell tumours, stimulation of haematopoietic cells, treatment of
                                                                                                                                                       976 cccatcgccagggtgacactgstgcggctgcgacagagccccagggccttcatccctccc
                                                                                                                                                                                                                                                  841 ccgctgggactgcgaggtctccctgtggtcgtcctggggactgtgcggaggccactgtggg
                                                                                                                                                                                                                                                                                                               1096 ccgctggaactgcgaggtctccctgtggtcgtcctggggactgtgcggaggccactgtggg
                                                                                                                                                                                                                                                                                                                                                                             901 aggetegggaceaagageageactegetaegteegggteeageeegeeaaeagggage
                                                                                                                                                                                                                                                                                                                                                                                                                                    1156 aggetegggaceaagageaggactegetacgteegggteeageeegaeaacaaegggage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ccctgccccgagctcgaagaagaggctgagtgcgtccctgataactgcgtctaagaccag
                                                                                                                       781 gccccagtcctgcccagcagggacaatgagattgtagacagcgcctcagttccagaaacg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1216 ccctgccccgagctcgaagaagaggctgagtgcgtccctgataactgcgtctaagaccag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cDNA encoding an adhesion-modulating protein zsig25.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1081 catgctgcaggcggccgagggcaca 1105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1336 catgctgcaggcggccgagggcaca 1360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Location/Qualifiers 40..1035
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /product= zsig25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAV63241 standard; cDNA; 1607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                98WO-US07117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          97US-0049288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (ZYMO ) ZYMOGENETICS INC
```

; 0

```
The present sequence encodes a protein designated zsig25. The zsig25 protein is an adhesion-modulating protein expressed at very high level in prostate cells. The protein is useful as a diagnostic marker for prostatic carcinoma and B-cell cancers, possibly also for infertility, and as a reagent for separating cancerous and non-cancerous cells. The products may also be used to diagnose or treat Wolf-Hirschhorn syndrome, associated with a deletion in the region of chromosome 4 (p16.3) where the zsig25 gene is located.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       840
                                                                                                                                                                                                                                                                                                                                                                                                                         240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  780
                                                                                                                                                                                                                                                                                                              tgcgctctcctcctggccactctcggcgccggccagccatcttgggggagagtccatc 120
                                                                                                                                                                                                                                                                                                                            321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            801
                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                        9
                                                                                                                                                                                                                                                                                  81
                                                                                                                                                                                                                                                        cgcgactttgcggagcgcggcgggcctgggcctggtgaaggagatcgaggcggggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 22 cgctgctcctgccgggtgatggaaaaccccagcccggccgccgccttgggcaaggccctc
                                                                                                                                                                                                                                                                                                                                                                   tgttccgccagagccctggccaaatacagcatcaccttcacgggcaagtggagccagacg
                                                                                                                                                                                                                                                                                                                                                                                  241 gccgcgcatagctccgactacagcatgtggaggaagaaccagtacgtcagtaacgggctg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gaggegetgeagagegtgeacgeggtgtttteggegeeegeegteeeeageggeacegg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          cagacgicggcggagciggaggigcagcgcaggcactcgciggitcigtigggggggcgc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 alegtgeceageceegactggttegtgggeetggacageetggacetgtgegacgggggac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  cccatcgccagggtgacactgctgcggctgcgacagagccccaggggccttcatcctccc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gccccagtcctgcccagcaggacaatgagattgtagacagcgcctcagttccagaaacg
                                                                                                                                                                                                                                                                                                                                                                                                                         goottooccaagcagtaccccctgttccgccccctgcccagtggtcttcgctgctgggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                    gccttccccaagcagtacccctgttccgccccctgcgcagtggtcttcgctgctggggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gccgcgcatagctccgactacagcatgtggaggaagaaccagtacgtcagtaacgggctg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cgcgactttgcggagcgcgaggcctgggcgctgatgaaggagatcgaggcgggggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 atcgtgcccagccccgactggttcgtgggcgtggacagcctggacctgtgcgacggggac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ttcaccttctcctcccccaacttcgccaccatcccgcaggacacggtgaccgagataacg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              tectecteteceagecacceggecaactecttetactaccegeggetgaaggeeetgeet
                                                                                                                                                                                                  DB 19; Length 1607;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                               4; Indels
                                                                                                                                                            Sequence 1607 BP; 284 A; 540 C; 494 G; 289 T; 0 other;
                                                                                                                                                                                                    Score 1098.6; DB 1
Pred. No. 5.3e-196;
                                                                                                                                                                                                                             0; Mismatches
           Pages 108-110; 161pp; English.
                                                                                                                                                                                                    99.48;
                                                                                                                                                                                                    Query Match 99.4
Best Local Similarity 99.6
Matches 1101; Conservative
            Claim 40;
                                                                                                                                                                                                                                                                                                              61
                                                                                                                                                                                                                                                                                                                                                                                             142
                                                                                                                                                                                                                                                                                                                                                                                                                                                 202
                                                                                                                                                                                                                                                                                                                                       82
                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                         181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               562
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  622
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      682
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          742
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     781
a
                                                                                                                                                                                                                                                                                                                                                                                       qq
                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                          Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Op
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Op
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                               ð
                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
```

```
1041
                                                                                                                                                                                                 ccctgccccgagctcgaagaagaggctgagtgcgtccctgataactgcgtctaagaccag 1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    research,
                                                                                                              922 aggetegggaceaagageaggaetegetaegteegggteeageeegeeaaeaacgggage 981
                          802 gccccagtcctgcccagcagggacaatgagattgtagacagcgcctcagttccagaaacg
                                                                                    aggetegggaeceaagageaggaetegetaegteegggteeageeeggeeaeaaeagggage
                                                                                                                                                                     982 ccctgccccgagctcgaagaagaggctgagtgcgtccctgataactgcgtctaagaccag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  The present sequence is that of a polynucleotide, designated rgl, encoding novel human extracellular matrix polypeptide RGl (see AAB8A472). The full:length coding sequence was deduced from a clone identified from a database screening that was found in the category of cell adhesion molecules and described as a homologue of f-spondin. RGl is expressed in prostate tissue and may be over-expressed in prostate tumours. It shows homology to a superfamily of extracellular matrix proteins encoded by the mindin/f-spondin genes. The invention provides human RGl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RGI; human; extracellular matrix protein; prostate cancer; metastasis; tumour; benign prostatic hyperplasia; gene therapy; diagnosis; antitumour; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ξ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Novel human extracellular matrix polypeptide, RG1, useful in a diagnosis and treatment of metastasis such as prostate cancer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Steinbrecher
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Schneider DW,
                                                                                                                                                                                                                                                                                                                                                                                                                                              Human extracellular matrix protein RG1 DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Location/Qualifiers
296..1294
                                                                                                                                                                                                                                                          1081 catgctgcaggcggccgaggcaca 1105
                                                                                                                                                                                                                                                                                    1102 catgctgcaggcggccgagggcaca 1126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Disclosure; Fig 4; 69pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Parry G,
                                                                                                                                                                                                                                                                                                                                                          BP
                                                                                                                                                                                                                                                                                                                                                          AAF90567 standard; DNA; 1770
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          15-DEC-2000; 2000WO-US33901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      99US-0172370,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     07-DEC-2000; 2000US-9966561.
                                                                                                                                                                                                                                                                                                                                                                                                                   (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Harkins R, Parkes D,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2001-398128/42.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (SCHD ) SCHERING AG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      P-PSDB; AAB90567
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WO200144291-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      16-DEC-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                   22-AUG-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -JUN-2001
                                                                                                                                                                                                                                                                                                                                                                                       AAF90567;
                                                                                                                                                                                                                                                                                                                              9
                                                                                   901
                                                                                                                                        961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Key
                                                                                                                                                                                                                                                                                                                                           AAF90567
                                                                                                                                                                                                                                                                                                                              RESULT
qq
                            δ
                                                     qq
                                                                                QΥ
                                                                                                           g
                                                                                                                                        δ
                                                                                                                                                                  qq
                                                                                                                                                                                              δý
                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                pp
```

```
polypeptides, polynucleotides encoding them (especially encoding amino acids 1-331, 21-331 or 27-331 of RG1), methods for producing the polypeptides, expression vectors and genetically engineered host cells for expression of the polypeptides. It also provides methods for utilizing the polynucleotides and polypeptides in research, diagnosis and therapeutic applications. Thus, rg1 polynucleotides can be used in the production of recombinant proteins, in methods for assessing RG1 expression in cells, and in the development of ribozyme and antisense oligonucleotides useful for administration e.g. to a human patient for treatment of a disease such as prostate cancer or
                                                                                                                                                                                                                                                                                                               benign prostatic hyperplasia, which is alleviated by decreasing
the level of RG1 activity.
        8888888888888888
```

Sequence 1770 BP; 285 A; 614 C; 570 G; 301 T; 0 other;

```
0
                                                                                                                                                                                                                                                                                                                                                                   360
                                                                                                                                                                                                                                                                                                                                                                                                                             420
                                                                                                                       tgcgctctcctctggccactctcggcgccgccggccagcctcttgggggagagtccatc 120
                                                                                                                                                                                  tgttccgccagagccctggccaaatacagcatcaccttcacgggcaagtggagccagacg 180
                                                                                                                                                                                                                                                                                                        geegegeatageteegactacageatgtggaggaagaaccagtacgtcagtaacgggetg 300
                                                                                                                                                                                                                                                                                                                                      577
                                                                                                                                                                                                                                                                                                                                                                                   cccatcgccagggtgacactggtgcggctgcgacagagccccagggccttcatccctcc 780
                                                                                                                                                                                                              398 tgttccgccggagcccagaccaaatacagcatcaccttcacgggcaagtggagccagacg 457
                                                                                                                                                                                                                                                                        458 gccttccccaagcagtacccctgttccgcccctgcgcagtggtcttcgctgctgggg 517
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cagacgtcggcggagctggaggtgcagcgcaggcactcgctggtctcgtttgtgtgcgc 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                tectecteteceagecacceggecaactecttetactacceggggetgaaggeeetgeet 720
                                                                                         278 egetgetectgeegggtgatggaaaaceceageeeggeegeegtegggeaaggeeete 337
                                                                                                                                                    tgcgctctcctcctggccactctcggcgccggccggccagcctcttgggggagagtccatc 397
                                                                                                                                                                                                                                                                                                                                                                                                                                                           cagacytcggcggagctggaggtgcagcgcaggcactcgctggtctcgtttgtggtgcgc 757
                                0; Gaps
                                                             1 egetgetectgeegggtgatggaaaaeeeeeageeeggeegeegtgggeaaggeeete 60
                                                                                                                                                                                                                                              cgcgactttgcggagcgcggcgaggcctgggcgctgatgaaggagatcgaggcgggggg
                                                                                                                                                                                                                                                                                                                                                                                                                               gaggegetgeagagegtgeaegeggtgtttteggegeeegecgteeeeageggeaeeggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 atcgtgcccagccccgactggttcgtgggcgtggacagcctggacctgtgcgacggggac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   878 ttcaccttctcctcccccaacttcgccaccatcccgcaggacacggtgaccgagataacg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              518 gccgcgcatagctccgactacagcatgtggaggaagaaccagtacgtcagtaacgggctg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ttcaccttctcctcccccaacttcgccaccatcccgcaggacacggtgaccgagataacg
                                                                                                                                                                                                                                                                                                                        Score 1098.6; DB 22; Length 1770;
Pred. No. 5.3e-196;
0; Mismatches 4; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       99.48;
99.68;
   Query Match
Best Local Similarity 99.6
ptches 1101; Conservative
                                                                                                                                                   338
                                                                                                                                                                                                                                                                                                        241
                                                                                                                                                                                                                                                                                                                                                                                              578
                                                                                                                                                                                                                                                                                                                                                                                                                                                          638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    869
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              758
                                                                                                                        61
                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                  301
                                                                                                                                                                                                                                                                                                                                                                                                                            361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             721
                                                                                         qq
                                                                                                                       ò
                                                                                                                                                q
                                                                                                                                                                                 ò
                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                    qq
                                                                                                                                                                                                                                                                                                                                  9
                                                                                                                                                                                                                                                                                                                                                                                            a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            q
                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                            ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
```

cccatcgccagggtgacactggtgcggctgcgacagagccccaggggccttcatccttcc 1057

966

qq

```
1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1357
                                                                                                                                                                                           1177
                                                                                                                                                                                                                                                                                                                            11.78 aggetegggaecaagageaggaetegetaegteegggteeageeegeeaaeaaegggage 1237
   840
                                                                                                                              900
                                                                                                                                                                                                                                                            960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        research,
                                                                                                                                                                ccctgccccqagctcgaagaagaggctgagtgcgtccctgataactgcgtctaagaccag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1298 agccccgcagcccctggggcccccggagccatgggggtgtcgggggctcctgtgcaggct
781 geceeagteetgeceageagggaeaatgagattgtagaeagegeeteagtteeagaaaeg
                                                             1058 gccccagtcctgcccagcagggacaatgagattgtagacagcgcctcagttccagaaacg
                                                                                                                                 ccgctgggactgcgaggtctccctgtggtcgtcctgggggactgtgcggaggccactgtggg
                                                                                                                                                                                                                                                               aggctcgggaccaagagcaggactcgctacgtccgggtccagcccaacaacgggagc
                                                                                                                                                                                                                                                                                                                                                                                                                                                          1238 ccctgccccgagctcgaagaagaggctgagtgcgtccctgataactgcgtctaagaccag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           The present sequence is that of a polynucleotide, designated rgl, encoding novel human extracellular matrix polypeptide RGl (see AAB8472). The full-length coding sequence was deduced from a clone identified from a database screening that was found in the category of cell adhesion molecules and described as a homologue of f-spondin. RGl is expressed in prostate tissue and may be over-expressed in prostate tumours. It shows homology to a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RG1; human; extracellular matrix protein; prostate cancer; metastasis; tumour; benign prostatic hyperplasia; gene therapy;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Novel human extracellular matrix polypeptide, RG1, useful in a diagnosis and treatment of metastasis such as prostate cancer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Parry G, Schneider DW, Steinbrecher
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Human extracellular matrix protein RG1 DNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
296..1294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1081 catgctgcaggcggccgagggcaca 1105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Claim 8; Fig 1; 69pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DNA; 1785
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    15-DEC-2000; 2000WO-US33901.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     16-DEC-1999; 99US-0172370.
07-DEC-2000; 2000US-9966561.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          diagnosis; antitumour; ds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Harkins R, Parkes D,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WPT; 2001-398128/42.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (SCHD ) SCHERING AG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAF90566 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 P-PSDB; AAB82472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WO200144291-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    22-AUG-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       21-JUN-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAF90566;
                                                                                                                                 841
                                                                                                                                                                                                                                                            106
                                                                                                                                                                                                                                                                                                                                                                                             196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAF90566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT
                                                                                                                                                                                           g
                                                                                                                                                                                                                                                            ōλ
                                                                                                                                                                                                                                                                                                                            q
                                                                                                                                                                                                                                                                                                                                                                                                                                                       q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A PART OF A PART
                                                                                                                              ŏ
                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      q
```

us-09-170-042a-1.rng

```
superfamily of extracellular matrix proteins encoded by the mindin/f-spondin genes. The invention provides human RG1 polypeptides, polyputcleotides encoding them (especially encoding camino acids 1-31, 21-31, 27-31 of RG1), methods for producing the polypeptides, expression of the polypeptides. It enjancered host cells for expression of the polypeptides. It calso provides methods for utilizing the polypucleotides and polypeptides in research, diagnosis and therapeutic applications. Thus, rg1 polypucleotides can be used in the production of recombinant proteins, in methods for assessing RG1 expression in cells, and in the development of ribozyme and antisense oligonucleotides useful for administration e.g. to a human pattent for treatment of a disease such as prostate cancer or bengin prostatic hyperplasia, which is alleviated by decreasing the level of RG1 activity.
```

Sequence 1785 BP; 300 A; 614 C; 570 G; 301 T; 0 other;

```
;
0
                                                                                                                                                                                                                                      240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     cccatcgccagggtgacactggtgcggctgcgacagagccccagggccttcatccctcc 780
                                                                                                                   tgcgctctcctcctggccactctcggcgccgccggccagcctcttgggggagagtccatc 120
                                                                                                                                                                                                                                                                                                                         577
                                                                                                                                                                                                                                                                                                                                                                                  637
                                                                                                                                                                                                                                                                                                                                                                                                                gaggegetgeagagegtgeacgeggtgtttteggeegecegeegteeecageggeaeegggg 420
                                                                                                                                                                                                                                                                                                                                                                                                                                           697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    757
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  atogigoccagoccogaciggitogigggoogiggacagociggacoigigogacggggac 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        877
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 937
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            tectecteteceagecaceeggecaacteettetaetaecegeggetgaaggeeetgeet 720
                                                                                      cyctyctcctyccygytyatygaaaaccccaycccyyccyccycctyyycaayyccotc 337
                                                        cgctgctcctgccgggtgatggaaaaccccagcccggccgccctgggcaaggccctc 60
                             0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      tgcgctctcctcctggccactctcggcgccggccggccagcctcttgggggagagtccatc
                                                                                                                                                                                           gccgcgcatagctccgactacagcatgtggaggaagaaccagtacgtcagtaacgggctg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            tgttccgccagagccctggccaaatacagcatcaccttcacgggcaagtggagccagacg
                                                                                                                                                                                                                                                                  gecticeceaageagiaceeeigiteegeeeeeigegeagiggietiegeigeiggg
                                                                                                                                                                                                                                                                                                                         518 geogogoatagetecgaetacageatgtggaggaagaaceagtacgteagtaaegggetg
                                                                                                                                                                                                                                                                                                                                                        cycyactttgcggagcgcggcgaggcctgggcgctgatgaaggagatcgaggcggcgggg
                                                                                                                                                                                                                                                                                                                                                                                  cgcgactttgcggagcgcggggggcgctgggcgctgatgaaggagatcgaggcggcggggg
                                                                                                                                                                                                                                                                                                                                                                                                                                             gaggegetgeagagegtgeacgeggtgtttteggegecegecegteeceageggeaceggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          cagacgtcggcggagctggaggtgcagcgcaggcactcgctggtttgtggtggtgcgc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               atcgtgcccagccccgactggttcgtgggcgtggacagcctggacctgtgcgacggggac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       treacettelectececeaaettegecaceatecegeaggacaeggtgacegagataaeg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ttcaccttctcctcccccaacttcgccaccatcccgcaggacacggtgaccgagataacg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          tectecteteccagecacceggccaactecttetactacccaeggetgaaggeetgeet
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 22; Length 1785;
                                                                                                                                  4; Indels
             Pred. No. 5.3e-196;
0; Mismatches 4;
99.4%; Score 1098.6; 99.6%; Pred. No. 5.3e
               est Local Similarity 99.6 atches 1101; Conservative
 Query Match
                                                          -
                                                                                      278
                                                                                                                                                                                                        398
                                                                                                                   61
                                                                                                                                             338
                                                                                                                                                                            121
                                                                                                                                                                                                                                     181
                                                                                                                                                                                                                                                                 458
                                                                                                                                                                                                                                                                                                                                                       301
                                                                                                                                                                                                                                                                                                                                                                                  578
                                                                                                                                                                                                                                                                                                                                                                                                                361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    869
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               758
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        818
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 878
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     721
                                                                                                                                        g
                                                                                                                                                                                                QQ
                                                                                                                                                                                                                                                                                                                QQ
                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                      g
                                                                                                                ò
                                                                                                                                                                          ò
                                                                                                                                                                                                                             õ
                                                                                                                                                                                                                                                         Q
                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            οy
```

```
1080
                                                                                     1177
                                                                                                                               1237
                                                                                                                                                   coctgeocogagetegaagaagaggetgagtgegteeetgataaetgegtetaagaceag 1020
                                                                                                                                                                                                                                                                                                                                                                                                     Human, PRO; EST; expressed sequence tag; PCR primer; hybridisation; probe; blood coagulation disorder; cancer; cellular adhesion disorder; secreted protein; transmembrane protein; ss.
cccatcgccagggtgacactggtgcggctgcgacagagccccagggccttcatcctccc 1057
                                                                                                                                                                         ccctgccccgagctcgaagaagaggctgagtgcgtccctgataactgcgtctaagaccag 1297
                                                                                                                                                                                                                    1298 agccccgcagcccctggggccccccggagccatggggtgtcggggggttcctgtgcaggct 1357
                                                               900
                                                                                                         960
                                                                                                                     841 ccgctggactgcgaggtctccctgtggtcgtcctggggactgtgcggaggccactgtggg
                                                                                     1118 ccgctggactgcgaggtctccctgtggtcgtcctggggactgtgcggaggccactgtggg
                                                                                                          aggetegggaecaagageaggaetegetaegteegggteeageeegeeaacaaegggage
                                                                                                                                                                                              1021 agccccgcagccctggggcccccggagccatggggtgtcggggggtccctgtgcaggct
                     geeceagteetgeecageagggaeaatgagattgtagaeagegeeteagtteeagaaaeg
                                                                                                                                                                                                                                         catgetgeaggeggeegaggeaca 1105
                                                                                                                                                                                                                                                              1358 catgetgeaggeggeegggeaca 1382
                                                                                                                                                                                                                                                                                                                                                                                  Human PRO866 nucleotide sequence.
                                                                                                                                                                                                                                                                                                                    ВЪ.
                                                                                                                                                                                                                                                                                                                  AAZ34089 standard; cDNA; 1846
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                98US-0079920.
98US-0079923.
98US-0080105.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         98US-0078910
98US-0078936
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                98US-0078939
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         98US-0079294.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              98US-0079663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    98US-0079689.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             98US-0079728
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         98US-0079786.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           98US-0080165.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               98US-0077791
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    98US-0040220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                980S-0078886
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        98US-0079664
                                                                                                                                                                                                                                                                                                                                                              (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                31-MAR-1998;
31-MAR-1998;
31-MAR-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      W09946281-A2
                                                                                                                                                                                                                                                                                                                                                              07-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                08-MAR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            16-SEP-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                11-MAR-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      11-MAR-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               12-MAR-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           13-MAR-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                20-MAR-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           20-MAR-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    20-MAR-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         25-MAR-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             27-MAR-1998
27-MAR-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    27-MAR-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             27-MAR-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   30-MAR-1998
30-MAR-1998
                                                                                                                                                                                                                                                                                                                                        AAZ34089;
                                                                                                                                                                                                                                                                                              æ
                                                                                                                                                                          1238
                     781
                                                                                                           901
                                                                                                                                                    961
                                                                                                                                                                                                                                          1081
                                                                                                                                                                                                                                                                                                       AAZ34089
                                                                                                                                                                                                                                                                                              RESULT
                                          q
                                                                                 Db
                                                                                                         Qγ
                                                                                                                             Op
                                                                                                                                                  QY
                                                                                                                                                                        g
                                                                                                                                                                                              Ω
                                                                                                                                                                                                                 qq
                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                             qq
                                                                                                                                                                                                                                                                                                                              δ
                                                              ò
```

```
Baker KP,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Yuan J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gurney A,
98US-0080327.
98US-0080338.
98US-0080333.
98US-0081079.
98US-00811079.
98US-00811079.
98US-0081203.
98US-0081203.
98US-008128.
                                                                                                 98US-0081955.
98US-0082568.
98US-0082569.
                                                                                                                                                                                                                                                                                                                                                                        980S-0085580
                                                                                                                                                                                                                                                                                                                                                                                                                                   98US-0086414
                                                                                                                                                                                                                                                                                                                                                                                                                                                  98US-0086486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        98US-0087208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        98US-0100038
                                                                                                                                                                                   98US-0083495.
                                                                                                                                                                                                   98US-0083499.
98US-0083500.
                                                                                                                                                                                                                                                                                                            98US-0084639
                                                                                                                                                                                                                                                                                                                   98US-0084640
                                                                                                                                                                                                                                                                                                                           98US-0084643
                                                                                                                                                                                                                                                                                                                                   98US-0085323
                                                                                                                                                                                                                                                                                                                                         980S-0085338
                                                                                                                                                                                                                                                                                                                                                98US-0085339
                                                                                                                                                                                                                                                                                                                                                         98US-0085573
                                                                                                                                                                                                                                                                                                                                                                                98US-0085582
                                                                                                                                                                                                                                                                                                                                                                                       98US-0085689
                                                                                                                                                                                                                                                                                                                                                                                                      98US-0085700
                                                                                                                                                                                                                                                                                                                                                                                                              98US-0085704
                                                                                                                                                                                                                                                                                                                                                                                                                      98US-0086023
                                                                                                                                                                                                                                                                                                                                                                                                                            98US-0086392
                                                                                                                                                                                                                                                                                                                                                                                                                                                         98US-0087098
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                98US-0094651
                                                                                                                               98US-0082704
98US-0082804
                                                                                                                                              98US-0082767
                                                                                                                                                                      98US-0083322
                                                                                                                                                                             98US-0083392
                                                                                                                                                                                                                  98US-0083545
                                                                                                                                                                                                                          98US-0083554
                                                                                                                                                                                                                                 98US-0083558
                                                                                                                                                                                                                                        98US-0083559
                                                                                                                                                                                                                                                98US-0083742
                                                                                                                                                                                                                                                        98US-0084366
                                                                                                                                                                                                                                                              98US-0084414
                                                                                                                                                                                                                                                                       98US-0084441
                                                                                                                                                                                                                                                                             98US-0084598
                                                                                                                                                                                                                                                                                              98US-0084627
                                                                                                                                                                                                                                                                                                    98US-0084637
                                                                                                                                                                                                                                                                                                                                                                                              98us-0085697
                                                                                                                         98US-00827
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (GETH ) GENENTECH INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Wood WI, Goddard A,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WPI: 1999-551358/46.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            P-PSDB; AAY41721
                                                                                                                                                                                                                                                                                                                       13-MAY-1998;
13-MAY-1998;
13-MAY-1000
                                                                                                                                                                                                                                                                                                                                                                    15-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                    18-MAY-1998;
22-MAY-1998;
22-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                 22-MAY-1998;
28-MAY-1998;
28-MAY-1998;
28-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                13-MAY-1998;
15-MAY-1998;
15-MAY-1998;
15-MAY-1998;
01-APR-1998;
01-APR-1998;
01-APR-1998;
01-APR-1998;
                                                                                                                                                                                                                                                                                                                                                                                      15-MAY-1998;
15-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        11-SEP-1998;
                                                                                                                                                                                                                                                                                                            MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                             5-MAY-1998
                                                                                                                                                                                                   29-APR-1998;
                                                                                                                                                                                                                                                                             07-MAY-1998;
07-MAY-1998;
                                                                     APR-1998;
                                                                                                                               22-APR-1998
22-APR-1998
                                                                                                                                                                      28-APR-1998;
                                                                                                                                                                              29-APR-1998;
                                                                                                                                                                                            29-APR-1998;
                                                                                                                                                                                                          29-APR-1998
                                                                                                                                                                                                                   29-APR-1998
                                                                                                                                                                                                                          29-APR-1998
                                                                                                                                                                                                                                        29-APR-1998
                                                                                                                                                                                                                                                30-APR-1998
                                                                                                                                                                                                                                                        05-MAY-1998
                                                                                                                                                                                                                                                                06-MAY-1998
                                                                                                                                                                                                                                                                       06-MAY-1998
                              08-APR-1998;
08-APR-1998;
                                              APR-1998
                                                     09-APR-1998
                                                              APR-1998
                                                                                   APR-1998
                                                                                                         -APR-1998
                                                                                                                -APR-1998
                                                                                                                                               23-APR-1998
                                                                                                                                                        23-APR-1998
                                                                                                                                                              -APR-1998
                                                                                                                                                                                                                                  29-APR-1998
                                                                                                                                                                                                                                                                                                                                                                                                      - MAY -
```

New secreted and transmembrane polypeptides and their polynucleotides,

tectecteteceagecaceeggecaactecttetactaceeggggggaggeetgeet 720 tectecteteceagecacceggecaactecttetactaccegeggetgaaggeeetgeet 976

q

δ

qq ζ

ŏ

Chen J;

tteacetteteececeaaettegecaceateeggagagagagagagagataaeg

9/9 480 cagacgtcggcggagctggaggtgcagcgaggcactcgctggtctcgttgtggtgcgc

421 677 481 737 541 767 601 857 199 917 721

d G Ω

ategigeceageceegaciggitegiggegiggacageetiggaceigtgegaeggggae 796

ga

रुं. व

atcgtgcccagccccgactggttcgtggggcgtggacagcctggacctgtgcgacggggac

```
ö
                                                                            The present invention describes secreted and transmembrane polypeptides and their polynucleotides. The nucleotide sequences are useful as sources of probes, primers, for chromosome mapping, and for generation of antisense sequences. They can also be used to create transgenic animals. The proteins can be used to treat a variety of diseases and disorders, depending on their function. Diseases that may be treated include blood coagulation disorders, cancers and cellular adhesion AAZ34338, and AAX41685 to AAX4174 represent polynucleotide and polypettide sequence given in the exemplification of the present
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                616
                                                                                                                                                                                                                                                                                                                                                                                                                                       257 cgctgctcctgccgggtgatggaaaaccccagcccggccgccgccttgggcaaggccctc 316
useful for treating blood coagulation disorders, cancers and cellular
                                                                                                                                                                                                                                                                                                                                                                                                     1 cgctgctcctgccgggtgatggaaaaccccagcccggccgccgcctgggcaaggccctc 60
                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gccttccccaagcagtaccccctgttccgccccctgcccagtggtcttcgctgctgggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 437 geetteeceaageagtaceeetgtteegeeecetgegeagtggtettegetggggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                geegegeatagetecgaetacageatgtggaggaagaaccagtacgtcagtaacgggetg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  cgcgactttgcggagcgcggggggggcctgggcgctgatgaaggagatcgaggcggggggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    cgcgactttgcggagcgcggcgaggcctgggcgctgatgaaggagatcgaggcggcgggg
                                                                                                                                                                                                                                                                                                                                                                                                                          DB 20; Length 1846;
                                                                                                                                                                                                                                                                                      Sequence 1846 BP; 331 A; 622 C; 571 G; 322 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                         Pred. No. 5.3e-196;
                                                                                                                                                                                                                                                                                                                                       99.4%; Score 1098.6; 99.6%; Pred. No. 5.3e
                                                                                                                                                                                                                                                                                                                                                                         0; Mismatches
                                                 Claim 2; Fig 86; 530pp; English
                                                                                                                                                                                                                                                                                                                                                                         Matches 1101; Conservative
                                                                                                                                                                                                                                                                                                                                                           Best Local Similarity
                 adhesion disorders
                                                                                                                                                                                                                                                           invention.
                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  24.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    qc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                            qa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    οy
   ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               \tilde{\Omega}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δy
```

```
1037 gccccagtcctgcccagcagggacaatgagattgtagacagcgcctcagttccagaaacg 1096
                                                                                                                                        1021 agccccgcagcccctggggccccccggagccatggggtgtcgggggctcctgtgcaggct 1080
                                                                                                        ccgctggactgcgaggtctccctgtggtcgtcctgggggactgtgcggaggccactgtggg 1156
                                                                                                                                                                                                                                            1277 agccccgcagcccctggggccccccggagccatggggtgtcggggggtcctgtgcaggct 1336
                                                                                                                                                                                                                                                                                                                                                                                                                                            Human; secreted protein; transmembrane protein; PRO; EST; cytostatic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Botstein D, Desnoyers L, Eaton DL;
Fong S, Gao W, Gerber H, Gerritsen ME;
Grimaldi CJ, Gurney AL, Hillan KJ;
                                                                               ccgctggactgcgaggtctccctgtggtcgtcctggggactgtgcggaggccactgtggg
                                                                                                                            aggetegggaccaagageaggactegetaegteegggteeageeegeeaaeaaegggage
                                   gccccagtcctgcccagcaggacaatgagattgtagacagcgcctcagttccagaaacg
                                                                                                                                                                                                                                                                                                                                                                                                                      Human PRO866 (UNQ435) nucleotide sequence SEQ ID NO:235.
                                                                                                                                                                                                                                                                                                                                                                                                                                                        expressed sequence tag; detection; cancer; ss.
                                                                                                                                                                                                                                                                    1081 catgctgcaggcggccgagggcaca 1105
                                                                                                                                                                                                                                                                                        1337 catgctgcaggcggccgagggcaca 1361
                                                                                                                                                                                                                                                                                                                                                   AAC78507 standard; cDNA; 1847 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   990.S-0123957.
990.S-0126773.
990.S-01310232.
990.S-0134287.
990.S-0141037.
990.S-0145698.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2000WO-US04341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             99WO-US31243.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  99WO-US28313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   99WO-US30095
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        99WO-US28565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2000WO-US00219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2000WO-US00376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            99WO-US28551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2000WO-US00277
                                                                                                                                                                                                                                                                                                                                                                                                  (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ashkenazi AJ, Baker KP,
Ferrara N, Filvaroff E,
Goddard A, Godowski PJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (GETH ) GENENTECH INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WO200053756-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  18-FEB-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       30-DEC-1999;
05-JAN-2000;
                                                                                                                                                                                                                                                                                                                                                                                                08-FEB-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              06-JAN-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             30-NOV-1999;
02-DEC-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  16-DEC-1999;
30-DEC-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                29-MAR-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            21-APR-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       28-APR-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   14-MAY-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             23-JUN-1999
26-JUL-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     29-OCT-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      02-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                        AAC78507;
                                                                                                                                                                                                                                                                                                                             σ
                                                                               841
                                                                                                      1097
                                  781
                                                                                                                                                                                                                                                                                                                                      AAC78507
                                  ò
                                                                               ð
                                                                                                     g
                                                                                                                                               q
                                                                                                                                                                                                g
                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                    ò
```

```
AAC78458 to AAC78599 represent polynucleotide and EST (expressed sequences tag) sequences which encode secreted or transmembrane PRO polypeptides. The PRO polynucleotides and polypeptides have cytostatic activity. The polynucleotides and polypeptides can be used for detecting molecules to cells and for modulating biological activities of cells, using the polypeptides for specific targeting. The polypeptide for specific targeting. The polypeptide targeting the polypeptide parsection activities of cells, the polypeptide parsection targeting. The polypeptide targeting the polypeptide parsection targeting the targeting can be used to AIII the target cells, e.g. for the treatment of cancers. The polypeptide pairs provide specific targeting of bioactive molecules to cells. AAC78600 to AAC78937 represent PCR primers and probes used in the isolation of the PRO polynucleotide sequences.
                                                                                                                                             Novel PRO polypeptides and polynucleotides used in detection methods, to target bioactive molecules to specific cells, and to modulate
  Pan J, Paoni NF, Roy M
Williams PM, Wood WI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 1847 BP; 332 A; 622 C; 571 G; 322 T; 0 other;
                         Tumas D,
     Napier MA,
                                                                                                                                                                                                                                           Claim 2; Fig 86; 636pp; English.
  Kuo SS, Nap
Stewart TA,
                                                                                                                                                                    to target bioactive
cellular activities
                                                                      2000-611443/58.
                                                                                             P-PSDB; AAB44277
Kljavin IJ,
Shelton DL,
```

δ qq δ q ολ . 음·

ó

240 9 Gaps 257 egetgeteetgeegggtgatggaaaaceeeageeeggeegeeggeetgggeaaggeeete 1 cgctgctcctgccgggtgatggaaaaccccagcccggccgccgtcgtgggcaaggcctt goottooccaagcagtaccccctgttccgccccctgcccagtggtcttcgctggggg Query Match 99.4%; Score 1098.6; DB 21; Length 1847; Best Local Similarity 99.6%; Pred. No. 5.3e-196; Matches 1101; Conservative 0; Mismatches 4; Indels 0; (181 437

gccgcgcatagctccgactacagcatgtggaggaagaaccagtacgtcagtaacgggctg 300 cgcgactttgcggagcgcgggggcctggggcgctgatgaaggagatcgaggcgggggg 360 cagacgtcggcggagctggaggtgcagcgcaggcactcgctggtctcgtttgtggtgcgc 480 677 cagacgtcggcggagctggaggtgcagcgcaggcactcgctggtctcgtttgtggtgcgc 736 540 cgcgactttgcggagcgcgaggcctgggcgctgatgaaggagatcgaggcgggggg 616 481 atcgtgcccagccccgactggttcgtgggcgtggacagcctggacctgtgcgacggggac 541 241 497 301 557 421 · 6 pp Óγ q g q ò ò δ g q ΩŽ ολ

ttcaccttctcctccccaacttcgccaccatcccgcaggacacggtgaccgagataacg 660

197

qq QY

```
dermatological; antiarthritt; antirheumatic; immunosuppressive; haemostatic; antithyroid; antidabetic; nootropic; neuroprotective; antianaemic; hepatotropic; virucide; antipsorlatic; antialhergic; antiasthmatic; systemic lupus erythematosus; rheumatoid arthritis; sosteoarthritis; spondyloarthropathy; systemic sclerosis; sarcoidosis; idiopathic inflammatory myopathy; systemic sclerosis; sarcoidosis; idiopathic inflammatory myopathy; Sjogren's syndrome; thyroiditis; systemic vasculitis; autoimmune heamolytic anaemia; diabetes mellitus; demyelinating disease; hepatobiliary disease; Whipple's disease; inflammatory bowel disease; juten-sensitive enteropathy; autoimmune disease; immune-mediated skin disease; allergic disease; immune-mediated skin disease; allergic disease; dimune-mediated skin disease; allergic disease; dimune-mediated skin disease; allergic disease; graft rejection; graft-versus-host-disease; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                         geceeagtectgeceageaggacaatgagattgtagacagegecteagttecagaaaeg 1096
                                                                                                                                                                                                                                                                              ccgctggactgcgaggtctccctgtggtcgtcctgggggactgtgcggaggccactgtggg 1156
                                                                                                                                                                                                                                                                                                                                                 1157 aggetegggaceaagageaggaetegetaegteegggteeageeegeeaaeaaegggage 1216
                                                                                                                                                                                                                                                                                                                                                                                      ccctgccccgagctcgaagaagaggctgagtgcgtccctgataactgcgtctaagaccag 1020
                                                                                                                                                                       840
                                                                                                                                                                                                                                             cogotygaactgogaggtotocotgtggtogtoctggggaactgtgcggaggocactgtggg 900
                                                                                                    cccatcgccagggtgacactggtgcggctgcgacagagccccagggccttcatccctcc 780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Human; immune related disease; diagnosis; antiinflammatory; cardiant;
                               tectecteteceagecaceeggecaacteettetactaceeggggetgaaggeeetgeet 720
                                                  aggetegggaceaagageaggaetegetaegteeggteeageeegeeaacaaegggage
                                                                                                                                                                          geceeagteetgeceageaggaeaatgagattgtagaeagegeetteagtteeagaaaeg
857 ttcaccttctcctccccaacttcgccaccatcccgcaggacacggtgaccgagataacg
                                                                                                                                                                                           Human PRO866 protein UNQ435 encoding cDNA SEQ ID NO:257.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1081 catgctgcaggcggccgagggcaca 1105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAC58630 standard; cDNA; 1847
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           99WO-US05028.
99US-0123618.
99US-0123957.
99US-0125775.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          02-MAR-2000; 2000WO-US05841.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  99US-0128849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               29-JAN-2001 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       40200053758-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                10-MAR-1999;
12-MAR-1999;
23-MAR-1999;
12-APR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        14-SEP-2000.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               08-MAR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAC58630;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 10
                                                                                                                                                                                                                                                                                1097
                                                                                                                                                                                                                                                                                                                                                                                          961
                                                                                                                                                                                                              1037
                                                                                                                                                                                                                                                                                                                                                                                                                            1217
                                   661
                                                                    917
                                                                                                       721
                                                                                                                                       977
                                                                                                                                                                                                                                                                                                                     901
                                                                                                                                                                          781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAC58630
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               qq
                                                                                                                                                                                                                                                                                q
                                                                                                                                                                                                                                                                                                                                                                                          οy
                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  q
                                                                    q
                                                                                                                                       pp
                                                                                                                                                                          ò
                                                                                                                                                                                                                                               ò
                                                                                                       ò
```

```
Sixty four PRO polypeptides, useful in the diagnosis and treatment of immune related disorders, e.g. systemic lupus erythematosis, rheumatoid arthritis, osteoarthritis, thyroiditis and diabetes mellitus -
                                                                                                                                                                                                                                                                                                                 Henzel W;
                                                                                                                                                                                                                                                                                                               Ashkenazi AJ, Baker KP, Goddard A, Gurney AL, Hebert C, Ht
Kabakoff RC, Lu Y, Pan J, Pennica D, Shelton DL, Smith V;
Stewart TA, Tumas D, Watanabe CK, Wood WI, Yan M;
                                                                                                                                                                                                                                                                                                                                                                                                           Claim 23; Fig 103; 309pp; English.
                                                99US-0144758.
                                                                                 99WO-US20594.
                                                                                                                                                                    99WO-US28634
                                 99WO-US12252.
                                                                                                          99WO-US21547
                                                                                                                  99WO-US23089
                                                                                                                                                            99WO-US28301
                                                                                                                                                                                    99WO-US28564
                                                                                                                                                                                                             6660ESD-0M66
                                                                                                                                                                                                                       99WO-US31274
                                                                                                                                                                                                                              2000WO-US00219
                                                                                                                                                                                                                                       2000WO-US00277
                                                                                                                                                                                                                                               2000WO-US00376
                                                                                                                                                                                                                                                                        2000WO-US04342
                        99US-0134287
                                         99US-0141037
                                                                 99US-0146222
                                                                          99WO-US20111
                                                                                          99WO-US20944
                                                                                                   99WO-US21090
                                                                                                                                   99WO-US28214
                                                                                                                                            99WO-US28313
                                                                                                                                                    99WO-US28409
                                                                                                                                                                                             99WO-US28565
                                                                                                                                                                                                      99WO-US30095
                                                                                                                                                                                                                                                        2000WO-US03565
                                                                                                                                                                                                                                                                                 2000WO-US04414
                                                                                                                                                                             99WO-US28551
                                                                                                                                                                                                                                                                                                 (GETH ) GENENTECH INC.
                                                                                                                                                                                                                                                                                                                                                  WPI; 2000-572271/53.
                                                                                                                           Sn66
                                                                                                                                                                                                                                                                                                                                                         P-PSDB; AAB33465.
                                                                                                                                                                                                                                              06-JAN-2000;
11-FEB-2000;
18-FEB-2000;
                                                                                                                                                                                                                                                                      18-FEB-2000;
22-FEB-2000;
                                                                                                                                                                                                                                       06-JAN-2000;
                                                                1999;
                                                                                                                                                                                                                               05-JAN-2000;
                                                1999;
                                                                                                  1999;
                                                                                                                   1999;
                                                                                                                          29-OCT-1999;
29-NOV-1999;
                                                                                                                                                                                                             20-DEC-1999;
                        14-MAY-1999;
                                                                                                          .5-SEP-1999;
                                                                                                                                            30-NOV-1999;
                                                                                                                                                    30-NOV-1999
                                                                                                                                                            01-DEC-1999;
                                                                                                                                                                   01-DEC-1999,
                                                                                                                                                                             02-DEC-1999
                                                                                                                                                                                     02-DEC-1999
                                                                                                                                                                                             02-DEC-1999;
                                                                                                                                                                                                                       30-DEC-1999
                                                                                                                   05-0CT-1
                                                                                  08-SEP-
                                                                                                   15-SEP-
                                                                                          13-SEP-
                                                                          71-SEP-
```

The present invention describes sixty four indian From proceins which can be used in the treatment of immune related diseases. The human PRO proteins, anti-FRO antibodies, agonists and antagonists are useful for relating and diagnosing immune related disorders. The disorders are selected from systemic lupus erythematosus, rheumatoid arthritis, selected from systemic lupus erythematosus, rheumatoid arthritis, systemic sclerosis, idiopathic inflammatory myopathies, Sjogren's systemic sclerosis, idiopathic inflammatory myopathies, Sjogren's systemic vasculitis, sarcoidosis, autoimmune haemolytic anaemia, autoimmune thrombocytopaenia, thyroiditis, diabetes mellitus, immune mediated renal disease, demyelinating diseases of the central and peripheral nervous systems, hepatobiliary diseases inflammatory bowel disease, gluten-sensitive enteropathy and Whipple's disease, autoimmune or immune-mediated skin diseases, allergic diseases, immunological diseases of the lung, and transplantation associated diseases including graft rejection and graft-versus-host-disease.

AACSSIST to AACSSIST expresent PCR primers and hybridisation probes used in the isolation of human PRO polynoclocide and protein AABSSIST, represent human PRO polynoclocide and protein The present invention describes sixty four human PRO proteins which can sequences given in the exemplification of the present invention.

Sequence 1847 BP; 332 A; 622 C; 571 G; 322 T; 0 other;

```
ő
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              257 cgctgctcctgccgggtgatggaaaaccccagcccggccgccgccctgggcaaggccctc 316
                                                                                                           tgcgctctcctcctggccactctcggcgccgccggccagcctttgggggagagtccatc 120
                                                                                                                                                                                           436
                                                                                                                                                                                                                   gccttccccaagcagtacccctgttccgcccctgcccagtggtcttcgctgctgggg 240
                                                                                                                                                                                                                                                                                                                                                                                  420
                                                                                                                                                                                                                                                                                                                                                                                                                                    540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gccccagtcctgcccagcagggacaatgagattgtagacagcgcctcagttccagaaacg 1096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 aggetegggaceaagageaggactegetaegteegggteeageeegeeaacaaegggage 1216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ccctgccccgagctcgaagaagactgagtgcgtccctgataactgcgtctaagaccag 1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ccctgccccgagctcgaagaagaggctgagtgcgtccctgataactgcgtctaagaccag 1276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1021 agccccgcagcccctggggccccccggagccatggggtgtcggggggttcctgtgcaggct 1080
                                                                                                                                                                tgttccgccagagccctggccaaatacagcatcaccttcacgggcaagtggagccagacg 180
                                                                                                                                                                                                                                                                          300
                                                                                                                                                                                                                                                                                     360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             737 atcgtgcccagcccgactggttcgtgggcgtggacagcctggacctgtgcgacggggac 796
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gccttccccaagcagtaccccctgttccgccccctgcgcagtggtcttcgctgctgggg 496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             780
                               Gaps
                                                    1 cgctgctcctgccgggtgatgaaaaccccagcccggccgccgcctgggcaaggcctc 60
                                                                                                                                   tgcgctctcctcctggccactctcggcgccgccggccagcctcttgggggagagtccatc
                                                                                                                                                                                       377 tgttccgccagagccccggccaaatacagcatcacctccacgggcaagtggagccagacg
                                                                                                                                                                                                                                                                       gccgcgcatagctccgactacagcatgtggaggaagaaccagtacgtcagtaacgggctg
                                                                                                                                                                                                                                                                                                                                                      cgcgactttgcggagcgcggggggcctgggcgctgatgaaggagatcgaggcgggggg
                                                                                                                                                                                                                                                                                                                                                                                 gaggedetgeagagegtgeaegeggtgtttteggegeeegeegteeeeageggeaeeggg
                                                                                                                                                                                                                                                                                                                                                                                              atcgtgcccagccccgactggttcgtgggcgtggacagcctggacctgtgcgacggggac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9ccceagtcctgcccagcagggacaatgagattgtagacagcgcctcagttccagaaacg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ccgctggactgcgaggtctccctgtggtcgtcctggggactgtgcggaggccactgtggg
                                                                                                                                                                                                                                                                                                                           cgcgactttgcggagcgcgaggcctgggcgctgatgaaggagatcgaggcgggggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ttcaccttctcccccaacttcgccaccatcccgcaggacacggtgaccgaggtaacg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       aggotcgggaccaagagcaggactcgctacgtccgggtccagcccaccaacaacgggagc
    DB 21; Length 1847;
                                                                                                                                                                                                                                                                                                                                           Indels
                Pred. No. 5.3e-196;
0; Mismatches 4;
  99.4%; Score 1098.6; 99.6%; Pred. No. 5.3e
                          Matches 1101; Conservative
              Similarity
Query Match
Best Local
                                                                                                                                   317
                                                                                                           61
                                                                                                                                                                                                                  181
                                                                                                                                                                                                                                           437
                                                                                                                                                                                                                                                                      241
                                                                                                                                                                                                                                                                                                                                                     557
                                                                                                                                                                                                                                                                                                                                                                                                         617
                                                                                                                                                                                                                                                                                                                                                                                                                                  421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        857
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            917
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 716
                                                                                                                                                                                                                                                                                               497
                                                                                                                                                                                                                                                                                                                          301
                                                                                                                                                                                                                                                                                                                                                                                361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    797
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1037
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1097
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     901
                                                                                                           ò
                                                                                                                                   g
                                                                                                                                                                                       q
                                                                                                                                                                                                                                                                                                                                                   P
                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                             ò
                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                          ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                         q
                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           å
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Op
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
```

```
agccccgcagcccctggggcccccggagccatggggtgtcgggggctcctgtgcaggct 1336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         The present sequence is that of cDNA clone DNA53971-1359 (ATCC 209756) encoding human PRO866 (see AAY95349), a novel antitumour protein showing similarity to mindin/Spondin proteins. The cDNA was isolated from a human foetal kidney cDNA library by hybridisation. A claimed method for inhibiting the growth of a tumour cell comprises exposing the tumor cell to PRO179, PRO207, PRO320, PRO219, PRO221, PRO324, PRO328, PRO310, PRO565, PRO365, PRO365, PRO5937-49), their agonists or chimeric polypeptides incorporating them. The tumour is especially a cancer selected from breast,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Novel composition to inhibit neoplastic cell growth or for treating tumor in mammal comprises polypeptides PRO179, PRO207, PRO319, PRO221, PRO224, PRO328, PRO301, PRO526, PRO362, PRO369 or
PRO866; human; antitumour; tumour; therapy; cytostatic; breast cancer; ovarian cancer; renal cancer; colorectal cancer; uterine cancer; prostate cancer; lung cancer; bladder cancer; central nervous system cancer; melanoma; leukaemia; neoplasm; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Godowski PJ, Gurney AL, Marsters SA;
                                                                                                                                                                                                                   Human PRO866 cDNA clone DNA53971-1359.
                                       catgctgcaggcggccgagggcaca 1105
                                                                 1337 catgctgcaggcggccgagggcaca 1361
                                                                                                                                                                                                                                                                                                                                          Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Claim 20; Fig 25; 172pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Wood WI;
                                                                                                                                   AAA49728 standard; cDNA; 1847
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               99WO-USO5028.
99US-0131245.
99US-0134287.
99US-0144758.
99US-0144698.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    98US-0113296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             99WO-US21547
                                                                                                                                                                                         25-SEP-2000 (first entry)
                                                                                                                                                                                                                                                                                                                                                       275..1270
/*tag= a
                                                                                                                                                                                                                                                                                                                                                                                               /*tag= b
353..1267
                                                                                                                                                                                                                                                                                                                                                                    /*tag= a
275..352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Goddard A,
                                                                                                                                                                                                                                                                                                                                                                                                                          /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pitti RM,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (GETH ) GENENTECH INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WPI; 2000-442668/38.
P-PSDB; AAY95349.
                                                                                                                                                                                                                                                                                                                                                                                                                                                    WO200037638-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ashkenazi AJ,
                                                                                                                                                                                                                                                                                                                 Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         02-DEC-1999;
                                                                                                                                                                                                                                                                                                                                                                                  sig_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 26-JUL-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            15-SEP-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               29-JUN-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -APR-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          28-APR-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       14-MAY-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     20-JUL-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Napier MA,
                                                                                                                                                              AAA49728;
                                                                                                         RESULT 11
            1277
                                       1081
                                                                                                                       AAA49728
                                                                                                                                                                                                                                                                                                                                            Key
                                                                                                                                                              δy
```

8 8 8 8 8 8

ò

a ò a ð g ò ρp ò

```
;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ccgctggactgcgaggtctccctgtggtcgtcctggggactgtgcggaggccactgtggg 1156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gececagtectgeceageaggaeaatgagattgtagaeagegeeteagtteeagaaaeg 1096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       tectecteteceagecacceggecaactecttetactaccegeggetgaaggeeetgeet 720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cagacgtcggcggagctggaggtgcagcgcaggcactcgctggtctcgtttgtggtgcgc 736
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              540
                                                                                                                                                                                                                                                                                                                                                               257 egetgetectgeegggtgatggaaaaceecageeeggeegeegteetgggeaaggeeete 316
                                                                                                                                                                                                                                                                                                                                                                                                               61 tgcgctctcctcctggccactctcggcgccggccggccagcctcttgggggagagtccatc 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   317 tgcgctctcctcctggccactctcggcgccgccggccagcctcttgggggagagtccatc 376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               atcgtgcccagccccgactggttcgtgggcgtggacagcctggacctgtgcgacggggac 796
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9
                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                tectecteceagecacceggecaactecttetactaccegeggetgaaggeeetgeet
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 cccatcgccagggtgacactggtgcggctgcgacagagccccaggggccttcatcctccc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ccgctggactgcgaggtctccctqtggtcgtcctggggaactgtgcggaggccactgtggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 atcgtgcccagccccgactggttcgtgggcgtggacagcctggacctgtgcgacggggac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ticacctictcctcccccaacticgccaccatcccgcaggacacggigaccgagataacg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gccccagtcctgcccagcagggacaatgagattgtagacagcgcctcagttccagaaacg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         tteacetteteeteeceaacttegeeaecateegeaggaeaeggtgaeegagataaeg
                                                                                                                                                                                                                                                                                                                 1 egetgetectgeegggtgatggaaaaceceageeeggeegeegeetgggeaaggeette
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   121 tgttccgccagagccctggccaaatacagcatcaccttcacgggcaagtggagccagacg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         377 tgttccgccagagccccggccaaatacagcatcaccttcacgggcaagtggagccagacg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gccttccccaagcagtacccctgttccgccccctgcccagtggtcttcgctgctgggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gccttccccaagcagtaccccctgttccgccccctgcgcagtggtcttcgctgctgggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 geegegeatageteegactacageatgtggaggaagaaccagtacgtcagtaacgggetg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gecgegeatagetecgaetacageatgtggaggaagaaccagtacgteagtaacgggetg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cacaactttgcggagcggcggcgagcctgggcgctgatgaaggagtcgaggcggcgggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     cgcgactttgcggagcgcgggggggcgctgggcgctgatgaaggagatcgaggcggggggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gaggegetgeagagegtgeacgeggtgtttteggegeeegeegteeeeageggeaceggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         cagacgicggaggitggaggitgcagcgcaggcactcgctggtctcgtttgtggtgcgc
ovarian, renal, colorectal, uterine, prostate, lung, bladder and central nervous system cancer, melanoma and leukaemia. Nucleic acids encoding PRO179 etc. are used in the recombinant production of the antitumour polypeptides.
                                                                                                                                                                                                                                                                                                                                            DB 21; Length 1847;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 1847 BP; 332 A; 622 C; 571 G; 322 T; 0 other;
                                                                                                                                                                                                          99.4%; Score 1098.6; DB 2. 99.6%; Pred. No. 5.3e-196;
                                                                                                                                                                                                                                                           0; Mismatches
                                                                                                                                                                                                          Query Match
Best Local Similarity 99.65
Matches 1101; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1037
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    737
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         857
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                917
```

q

ò

g

õ

g

q

g ŏ

ò

g õ q õ

δ

901 aggetegggaceaagageaggaetegetaegteegggteeageeegeeaaeaaegggage 960

```
the encoded polypeptides (AAM38642-AAM42213) with nootropic, immunosuppressant and cytostatic activity. The polynucleotides are useful in gene therapy. A composition containing a polypeptide or polynucleotide of the invention may be used to treat diseases of the peripheral nervous
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      system, such as peripheral nervous injuries, peripheral neuropathy and localised neuropathies and central nervous system diseases, such as Alzheimer's, Parkinson's disease, Huntington's disease, amyotrophic lateral sclerosis, and Shy-Drager Syndrome. Other uses include the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ä
           aggetegggaceaagageaggaetegetaegteegggteeageeegeeaacaaegggage 1216
                                                                          ccctgccccgagctcgaagaagaggctgagtgcgtccctgataactgcgtctaagaccag 1276
                                                                                                       agccccgcagcccctggggccccccgggagccatggggtgtcggggggctcctgtgcaggct 1080
                                                                                                                       Human; nootropic; immunosuppressant; cytostatic; gene therapy; cancer;
                                                                                                                                                                                                                                                                                                                                                                                                              peripheral nervous system; neuropathy; central nervous system; Alzheimer's; Parkinson's disease; Huntington's disease; haemostatic; amyotrophic lateral sclerosis; Shy-Drager Syndrome; chemotactic; chemotactic; thrombolytic; drug screening; arthritis; inflammation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             The invention relates to human nucleic acids (AAI57798-AAI61369) and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Novel nucleic acids and polypeptides, useful for treating disorders such as central nervous system injuries \cdot
Zhang J;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qian XB,
Yang Y,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Chen R, Ma Y,
Xu C, Xue AJ,
R, Drmanac RT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Claim 1; SEQ ID NO 3803; 10078pp; English.
                                                                                                                                                                                                                                                                                                                                                                     Human polynucleotide SEQ ID NO 3803.
                                                                                                                                                                   1.081 catgctgcaggcggccgagggcaca 1105
                                                                                                                                                                                                  catgctgcaggcggccgagggcaca 1361
                                                                                                                                                                                                                                                                            ВР
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Goodrich R,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  03-AUG-2000; 2000US-0620312.
03-AUG-2000; 2000US-0653450.
14-SEP-2000; 2000US-0653191.
19-0CT-2000; 2000US-067777.
                                                                                                                                                                                                                                               RESULT 12
AAI59814/c
ID AAI59814 standard; cDNA; 1926
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Liu C, Asundi V,
Wang Z, Wehrman T,
Zhou P, Goodrich R
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     25-APR-2000; 2000US-0552317.
09-JUL-2000; 2000US-0598042.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         26-DEC-2000; 2000WO-US34263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2000US-0488725
                                                                                                                                                                                                                                                                                                                                          (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WPI; 2001-442253/47.
P-PSDB; AAM40658.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (HYSE-) HYSEQ INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WO200153312-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Leukaemia; ss
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      21-JAN-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens.
                                                                                                                                                                                                                                                                                                                                        22-OCT-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          26-JUL-2001,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        QA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Tang YT,
                                                                                                                                                                                                                                                                                                           AAI59814;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Zhao
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Wang
                1157
                                                                            1217
                                                                                                          1021
                                                                                                                                                                                                  1337
                                                196
                                                                                                                                                                                                                                                                                            5
                                                                            CC
                                                                                                                                      C
                                                                                                                                                                      ŏλ
                                                                                                                                                                                                  pp
```

```
ö
utilisation of the activities such as: Immune system suppression, Activin/inhibin activity, chemotactic/chemokinetic activity, haemostatic and thrombolytic activity, cancer diagnosis and therapy, drug screening, assays for receptor activity, arthritis and inflammation, leukaemias and C.N.S disorders.
                                                                  not form part of the printed
                                                                                                                                                                                                                   1563 GGTGCTCCTGCGGGGTGATGGAAAACCCCAGGCGGGCGGCCGCCTGGGCAAGGCCCTC 1504
                                                                                                                                                                                                                                                         1204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1323 GCCGCGCATAGCTCCGACTACAGCATGTGGAGGAACCAGTACGTCAGTAACGGGCTG 1264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    tgttccgccagagccctggccaaatacagcatcaccttcacgggcaagtggagccagacg 180
                                                                                                                                                                                                                                                                                                                                                   240
                                                                                                                                                                                                                                                                                                                                                                                                    300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         540
                                                                                                                                                                                                                                                                                                                                                                                                                                                   C9Cgactttgcggagcgcggcgaggcctgggcgctgatgaaggagatcgaggcggcggggg 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ccgctggactgcgaggtctccctgtggtctcctggggactgtgcggaggccactgtggg 900
                                                                                                                                                                                               9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cgctgctcctgccgggtgatggaaaaccccagcccggccgccgcctgggcaaggccctc
                                                                                                                                                                                                                                                                                                                                                                                                  gccgcgcatagctccgactacagcatgtggaggaagaaccagtacgtcagtaacgggctg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   481 atcgtgcccagccccgactggttcgtgggcgtggacagcctggacctgtgcgacggggac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     cccatcgccagggtgacactggtgcggctgcgacagagccccagggccttcatccctcc
                                                                                                                                                                                                                                                                                                                                                 gccttccccaagcagtaccccctgttccgccccctgcccagtggtcttcgctgctgggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ttcaccttctcctccccaacttcgccaccatcccgcaggacacggtgaccgaggtaacg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           tectecteteceagecaceggecaactecttetactaceegeggetgaaggeeetgeet
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                903 TCCTCCTCTCCCAGCCACCCGGCCAACTCCTTCTACTACCCGCGGCTGAAGGCCCTGCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   781 gccccagtcctgcccagcagggacaatgagattgtagacagcgcctcagttccagaaacg
                                                                                                                                            DB 22; Length 1926;
                                                                                                                                                                     .;
0
                                                                                                                                                                     4; Indels
                                                                                                    Sequence 1926 BP; 337 A; 604 C; 645 G; 334 T; 6 other;
                                                                                                                                          99.4%; Score 1098.6; DB 2:
99.6%; Pred. No. 5.3e-196;
ive 0; Mismatches 4;
                                                           Note: The sequence data for this patent did specification.
                                                                                                                                                                   Matches 1101; Conservative
                                                                                                                                           Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                              121
                                                                                                                                                                                                                                                                                                                                               181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           721
                                                                                                                                                                                                                                                                                                                                                                                                 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                   301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             841
 ò
                                                                                                                                                                                                                    a
                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                   Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            qa
                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
```

```
the encoded polypeptides (AAM38642-AAM42213) with nootropic, immunosuppressant and cytostatic activity. The polymerotides are useful in gene therapy. A composition containing a polypeptide or polynucleotide of the invention may be used to treat diseases of the peripheral nervous system, such as peripheral nervous injuries, peripheral neuropathy and
                                                                                                                                                                                                                                                                                                                                                                                                  cancer;
                                                                                ccctgccccgagctcgaagaagaggctgagtgcgtccctgataactgcgtctaagaccag 1020
                                                                                                                                     agoccogcagoccoctggggcccccgggagccatggggtgtcggggggttcctgtgcaggct 1080
                                                                                                                                                 ά
723 CCGCTGGACTGCGAGGTCTCCCTGTGGTCGTCCTGGGGGACTGTGCGGAGGCCACTGTGGG 664
                                                                                                                                                                                                                                                                                                                                                                                          Human; nootropic; immunosuppressant; cytostatic; gene therapy; cancer peripheral nervous system; CNS; Alzheimer's; Parkinson's disease; Huntington's disease; hemostatic; amyotrophic lateral sclerosis; Shy-Drager Syndrome; chemotactic; chemokinetic; thrombolytic; drug screening; arthritis; inflammation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Wang
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             The invention relates to human nucleic acids (AAI57798-AAI61369) and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               for treating disorders
                         901 aggetegggaceaagageaggactegetaegteegggteeageeegeeaaaaaeggggage
                                       Zhang J;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ren F,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Qian XB,
Yang Y,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ten R, Ma Y, C
Ku C, Xue AJ,
Drmanac RT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               useful
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Claim 1; SEQ ID NO 231; 10078pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Novel nucleic acids and polypeptides, us such as central nervous system injuries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Chen R, Xu C, ;
                                                                                                                                                                                        1081. catgctgcaggcggccgagggcaca 1105
                                                                                                                                                                                                                                                                                                                                                                    Human polynucleotide SEQ ID NO 231.
                                                                                                                                                                                                      BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Asundi V, Che
Wehrman T, Xu
Goodrich R,
                                                                                                                                                                                                                                                                                  AAI58028 standard; cDNA; 1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              21-JAN-2000; 2000US-0488725.
25-APR-2000; 2000US-0552317.
09-UUL-2000; 2000US-0588042.
19-JUL-2000; 2000US-0620312.
03-AGC-2000; 2000US-063450.
14-SEP-2000; 2000US-063451.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      26-DEC-2000; 2000WO-US34263.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2000US-0727344
                                                                                                                                                                                                                                                                                                                                         (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WPI; 2001-442253/47.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (HYSE-) HYSEQ INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Zhou P,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Liu C,
Wang 2,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   P-PSDB; AAM38872
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WO200153312-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                leukaemia; ss
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             29-NOV-2000;
                                                                                                                                                                                                                                                                                                                                         22-OCT-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             26-JUL-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Wang J, W
Zhao QA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Tang YT,
                                                                                                                                                                                                                                                          RESULT 13
                                                                                                                                    1021
                                                                              961
                                                                                                                                                                                                                                                                                                ò
                                                    q
                                                                              ò
                                                                                                      qq
                                                                                                                                                            q
                                                                                                                                                                                                                qq
                                                                                                                                                                                        ő
```

```
localised neuropathies and central nervous system diseases, such as Alzheimer's, Parkinson's disease, ampointophic lateral sclerosis, and Shy-Drager Syndrome. Other uses include the utilisation of the activities such as: Immune system suppression. Activinibin activity, chemotactic/chemokinetic activity, hemostatic and thrombolytic activity, cancer diagnosis and therapy, drug screening, assays for receptor activity, arthritis and inflammation, leukaemias and C.N.S disorders.
Note: The sequence data for this patent did not form part of the printed specification.
```

8×6666666666888

specification. Sequence 1991 BP; 339 A; 669 C; 620 G; 350 T; 13 other;

; 0 tteacettetectececeaaettegecaecatecegeaggaeaeggtgaeegagataaeg 1030 tectecteteceagecaceeggecaactecttetactaceegggggggaaggeetgeet 720 610 300 730 480 tgttccgccagagccctggccaaatacagcatcaccttcacgggcaagtggagccagacg 180 tgegeteteeteetggecacteteggegeegeeggeeageetettgggggagagteeate 120 egetgetectgecgggtgatggaaaaccccagcccggccgccgcctgggcaaggccctc 60 Gaps atcgtgcccagccccgactggttcgtgggcgtggacagcctggacctgtgcgacggggac geetteeccaageagtaceceetgtteegeeeceetgeecagtggtettegetgetggggg geegegeatagetecegactacageatgtggaggaagaaccagtacgtcagtaacgggetg cgcgactttgcggagcgcggcgaggcctgggcgctgatgaaggaggtcgaggcgggggg cgcgactttgcggagcgcgaggcctgggcgctgatgaaggagatcgaggcggggg cagacgicggcggagciggaggigcagcgcaggcactcgciggittgiggiggcgc atcgtgcccagccccgactggttcgtgggcgtggacagcctggacctgtgcgacggggac gccttccccaagcagtacccctgttccgccccctgcgcagtggtcttcgctgctgggg tgttccgccagagccccggccaaatacagcatcaccttcacgggcaagtggagccagacg 99.4%; Score 1098.6; DB 22; Length 1991; 99.6%; Pred. No. 5.3e-196; .; 0 4; Indels 0; Mismatches Conservative Similarity Matches 1101; Query Match Best Local S 911 661 1031 721 1091 731 791 851 601 61 431 121 491 181 551 241 671 481 301 361 q g g ò q ò q qq ô g ò ŏ ò g q g g δ ò ò ð δ

1151 geceeagteetgeecageagggaeaatgagattgtagacagegeeteagtteeagaaacg 1210

gccccagtcctgcccagcaggacaatgagattgtagacagcgcctcagttccagaaacg

781

δλ

```
Secreted protein, human, autoimmune disorder; multiple sclerosis; ulcer; systemic lupus erythematosus; rheumatoid arthritis; anaemia; stroke; hamenatopoissis regulation; tissue regrowth; wound healing; haemophilia; Alzheimer's disease; Parkinson's disease; Shy-drager syndrome; cancer; contraceptive; infection; growth inhibition; hyperproliferative disorder;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              This invention relates to 59 human secreted proteins and the nucleotide sequences encoding them. Sequences AAC59788-C59846 and AAB34687-B34745 represent the proteins and their encoding nucleotide sequences, and sequences AAB34746-B34771 represent fragments of the proteins. Probes for the DNA sequences are represented by sequences AAC59847-C59596. The
                                                                                                                                    agccccgcagccctgggggcccccggagccatggggtgtcggggggttcctgtgcaggct 1080
aggotcgggaccaagagcaggactcgctacgtccgggtccagcccgccaacaacgggagc 1330
                                                                                                                     ccetgeceegagetegaagaagaggetgagtgegteeetgataactgegtetaagaeeag 1020
                                                                                                                                                                                                           1391 agccccgcagcccctggggccccccggagccatggggtgtcgggggctcctgtgcaggct 1450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Novel proteins and polypeptides useful for the treatment of e.g multiple sclerosis, systemic lupus erythmatosus, rheumatoid arthritis, cancer, Alzheimer's disease, Parkinson's disease, stroke, anemia and
                                                           aggctcgggaccaagagcaggactcgctacgtccgggtccagccgccaacaacgggagc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Hall J, Rapiejko
                                                                                                                                                                                                                                                                                                                                                                                                                                        Human secreted protein encoding DNA clone vp22 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Claim 22; Page 394-395; 493pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Hoffman H,
                                                                                                                                                                                                                                                         catgctgcaggcggccgagggcaca 1105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              99US-0124808.
99US-0124916.
99US-0149639.
99US-0157247.
                                                                                                                                                                                                                                                                                                                                                 AAC59794 standard; DNA; 1718
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   17-MAR-2000; 2000WO-US07285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2000US-0182711
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           99US-0167824
                                                                                                                                                                                                                                                                                                                                                                                                              26-JAN-2001 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Valenzuela D, Yuan O,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (ALPH-) ALPHAGENE INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2000-638211/61.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WPI; 2000-638211,
P-PSDB; AAB34693
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WO200055375-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                psoriasis; ds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .7-MAR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               17-AUG-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           29-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     21-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 17-MAR-1999,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              01-0CT-1999
                                                                                                                                                                                                                                                                                                                                                                               AAC59794;
                                                                                         1271
                                                                                                                                                                                                                                           1081
                                                                                                                                                    1331
                                                                                                                                                                                  1021
                                                              90.i
                                                                                                                        196
                                                                                                                                                                                                                                                                                                                                   AAC59794
                                                                                                                                                                                                                                                                                                                                                                               g
                                                            λö
                                                                                         급
                                                                                                                        ŏ
                                                                                                                                                 q
                                                                                                                                                                                  ò
                                                                                                                                                                                                            qq
                                                                                                                                                                                                                                             ŏ
```

cerebroprotective, hadraguedical, antiparkinsonian, cerebroprotective, antianaemic, nootropic, antiparkinsonian, cerebroprotective, hadraguedic, noncropic, antiparkinsonian, cerebroprotective, hadraguedic, vulnerary, cytostatic, antipsoriatic, antibacterial, virucide, and fungicide activity. The proteins and nucleotide sequences are useful as nutritional sources or supplements of and disorders, which may be genetic or resulting from infections, and disorders, which may be genetic or resulting from infections, and disorders, which may be genetic or resulting from infections, and disorders such as matemias by regulating paramatopid or lymphoid cell deficiencies such as anaemias by regulating hadmatopoidesis. The proteins are also useful in compositions for bone, cartilage, tendon, ligament and/or nerve tissue growth or regeneration, for wound healing, tissue repair and replacement and in the treatment of wounds, incisions and ulcers. Other uses include in the treatment of central and peripheral nervous system and neuropathies such as Alzheimer's and traumatic disorders, such as spinal cord disorders, head trauma and traumatic disorders, such as spinal cord disorders, head trauma and creating coagulation disorders such as haemophilias. The protein and nucleotide sequences with cacherin activity are useful for treating cancer. Other uses for the protein activity are useful for treating cancer. Other uses for the protein activity are useful for treating cancer. Other parasites, for effecting bodily characteristics such as height, weight, hair colour, effecting bodily characteristics such as height, weight, hair colour, effecting bodily characteristics cylus or rhythms, effecting metabolism, catabolism, anabolism, processing, utilization, storage or elimination of dietary fat, lipid, protein, carbohydrate, vitamins, such as neveral such as neve dermatological, immunosuppressive, hyperproliferative disorders such as psoriasis. proteins exhibit neuroprotective,

288888888888888888888888888

Sequence 1718 BP; 297 A; 579 C; 535 G; 307 T; 0 other;

\$\$\$\$\$\$\$\$\$\$\$\$

ij 145 cgctgctcctgccgggtgatgaagaccccagcccggccgccgcctgggcaaggcctc 204 tgcgctctcctcctggccactctcggcgccggccggccagcctcttgggggagagtccatc 120 tgttccgccagagccctggccaaatacagcatcaccttcacgggcaagtggagccagacg 180 300 gccgcgcatagctccgactacagcatgtggaggaagaaccagtacgtcagtaacgggctg 443 420 atcgtgcccagccccgactggttcgtgggcgtggacagcctggacctgtgcgacggggac 540 . 1 egetgeteetgeegggtgatggaaaaccceageeeggeegeegtegggeaaggeete 60 1; Gaps 205 tgcgctctcctcggccactctcggcgccggccggccagcctcttggggggagagtccatc gccttccccaagcagtaccccctgttccgccccctgcccagtggtcttcgctgctgggg gccgcgcatagctccgactacagcatgtggaggaagaaccagtacgtcagtaacgggctg tgttccgccggagcccaggccaaatacagcatcaccttcacgggcaagtggagccagacg g-cttccccaagcagtaccccctgttccgccccctgcgcgcagtggtcttcgctggggg cgcgactttgcggagcgcggggggcgctgggcgctgatgaaggagatcgaggcggcgggg atcgtgcccagccccgactggttcgtgggcgtggacagcctggacctgtgcgacggggac 98.5%; Score 1088.2; DB 21; Length 1718; 3; Indels Pred. No. 4.6e-194; 0; Mismatches 99.68; Best Local Similarity 99.6 Matches 1101; Conservative Query Match 265 61 241 181 325 384 301 444 361 504 421 564 481 624 à 셤 ò ρp g ò g ò g 요 ò g

```
1104 ccctgccccgagctcgaagaagaggctgagtgcgtccctgataactgcgtctaagaccag 1163
                                                                                                                                                                                                                                                                                                                                                                                                                                                               1021 agccccgcagcccctggggccccccggagccatggggtgtcgggggctcctgtgcaggct 1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1164 agccccgcagcccctggggccccccggagccatggggtgtcgggggctcctgtgcaggct 1223
                                                          9
                                                                                                                                                                                                                                     840
                                                                                                                                                                             780
                                                                                                                                                                                                                                                               983
                           tectecteteceagecaceeggecaactecttetactaceegggetgaaggeeetgeet 863
1044 aggetegggaceaagageaggaetegetaegteegggteeageeegeeaaeggggage
                                                       tcaccttctcctcccccaacttcgccaccatcccgcagacacggtgaccgagataacg
                                                                                                                 tcctcctctcccagccacccggccaactccttctactaccgcggctgaaggccctgcct
                                                                                                                                                                                                                                                                                                                                               aggctcgggaccaagagcaggactcgctacgtccgggtccagccgccaacaacgggagc
                                                                                                                                                                                                                                                                                                                                                                                                     961 ccctgccccgagctcgaagaagaggctgagtgcgtccctgataactgcgtctaagaccag
                                                                                    ttcaccttctcctccccaacttcgccaccatcccgcaggacacggtgaccgagataacg
                                                                                                                                                                            cccatcgccagggtgacactggtgcggctgcgacagagccccagggccttcatcctccc
                                                                                                                                                                                                       cccatcgccagggtgacactggtgcggctgcgacagagccccagggccttcatcctccc
                                                                                                                                                                                                                                  gococcagtcotgcccagcaggacaatgagattgtagacagcgcctcagttccagaaacg
                                                                                                                                                                                                                                                               gccccagtcctgcccagcaggacaatgagattgtagacagcgcctcagttccagaaacg
                                                                                                                                                                                                                                                                                          ccgctggactgcgaggtctccctgtggtcgtcctgggggactgtgcgaggccactgtggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mindin; human; integrin ligand; angiogenic disease; cancer; metastasis; chronic inflammatory disorder; rheumatoid arthritis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    atherosclerosis; macular degeneration, diabetic retinopathy; restenosis; Alzheimer's disease; neural disorder; tissue remodelling; therapy; diagnosis; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Tsui
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1081 catgctgcaggcggccgagggcaca 1105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1224 catgctgcaggcggccgagggcaca 1248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Trulli SH,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (SMIK ) SMITHKLINE BEECHAM CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAV72537 standard; cDNA; 996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 98WO-US09476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             97US-0046106.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Jonak ZL, Lane PA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WPI; 1999-034688/03
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Human mindin cDNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                P-PSDB; AAW83328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WO9850073-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 07-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            09-MAY-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-MAR-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    12-NOV-1998.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAV72537;
                                                                                                                                                                                                                                                            924
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 15
                           684
                                                                                                                                            804
                                                                                                                                                                                                    864
                                                       1.09
                                                                                                                 199
                                                                                                                                                                         721
                                                                                                                                                                                                                                  781
                                                                                                                                                                                                                                                                                         841
                                                                                                                                                                                                                                                                                                                                                 901
                        q
                                                       ŏ
                                                                                 Op
                                                                                                                                           q
                                                                                                               ζ
                                                                                                                                                                       δy
                                                                                                                                                                                                    q
                                                                                                                                                                                                                              οy
                                                                                                                                                                                                                                                         Db
                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                               Op
                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                               Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Op
                                                                                                                                                                                                                                                                                                                                               ŏ
                                                                                                                                                                                                                                                                                                                                                                                                     Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                               òγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
```

also claimed. ្តម្

A new polypeptide is the integrin ligand, human mindin - useful in therapy and diagnostic assays for diseases such as those associated with angiogenesis

Claim 2; Page 28; 39pp; English.

integrin ligand. It has homology to F spondin, and may have a continuous activity in normal and disease states. The invention provides human mindin polypeptides and polynucleotides cand methods for producing such polypeptides and polynucleotides in the treatment of angiogenic diseases (cancer, cancer metastasis, chronic inflammatory disorders, rheumatoid arthritis, atherosclerosis, macular degeneration, diabetic retinopathy), restenosis, Alzheimer's disease, neural disorders and tissue remodelling. The invention also relates to methods for identifying agonists and antagonists/inhibitors and for treating conditions associated with human mindin imbalance with the identified compounds. Diagnostic assays for detecting diseases associated with inappropriate human mindin activity or levels are cDNA clone codes for human mindin (see AAW83328), a novel

Sequence 996 BP; 167 A; 352 C; 317 G; 160 T; 0 other;

0; Gaps Score 989.6; DB 20; Length 996; Pred. No. 9.7e-176; 4; Indels 0; Mismatches 89.68; Matches 992; Conservative Local Similarity Query Match

. 19 atggaaaaccccagcccggccgccctgggcaaggccctctgcgctctcctcctgggcc 78 g

1 atggaaaaccccagcccggccgccctgggcaaggccctctgcgctutcctcctggcc 60

79 acteteggegeegeeggeeageetettggggggagagteeatetgtteegeeagageeetg 138 acteteggegeegeeggeeageetettggggggagagteeatetgtteegeeagageeetg 120 61 q ò

139 οy

ccctqttccqccccctqcccaqtgqtcttcqctqctggggqccgcatagctccgac 199 121 QQ ò

cccctgttccgccccctgcgcagtggtcttcgctgctggggggccgcgcatagctccgac 240 181

g

tacagcatgtggaggaagaaccagtacgtcagtaacgggctgcgcgactttgcggaacgc 300 tacagcatgtggaggaagaaccagtacgtcagtaacgggctgcgcgactttgcggagcgc 241 259

ggcgaggcctgggcgctgattaaggagatcgaggcggcggggggaggcgctgcagagcgtg 360 301 319 δ g

cacgeggtgtttteggegeeegeegteeceageggeacegggeagaegteggeggagetg 361 379

ò q ò q οy QΩ

gaggtgcagcgcagtcactcgcttgttgttgttgttgcgcatcgtgcccagccccgac 421 439

tggttcgtggggggtggacagcctggacctgtgcgacggggaccgttggcgggaacaggcg 558 tggttcgtgggcgtggacagcctggacctgtgcgacggggaccgttggcgggaacaggcg 499 481 559 ò a

619

841 tecetgtggtegtectectggggaetgtgeggaggeeactgtgggaggetegggaeceaagage 900 601 aacttegecaceateeegeaggacaeggtgaeegagataaegteeteeteeteeageeae 660 coggecaactecttetactaccegeggetgaaggeeetgeeteecategeeagggtgaea 720 agggacaatgagattgtagacagcgcctcagttccagaaacgccgctggactgcgaggtc 858 tecetgiggicgicciggggacigicgaggccacigigggaggetegggaccaagage 918 781 agggacaatgagattgtagacagcgcctcagttccagaaacgccgctggactgcgaggtc aggactogctacgtccgggtccagcccgccaacaacgggagcccctgccccgagctcgaa coggocaactecttctactaccegoggetgaaggeettgeeteecategecagggtgaca 199 859 619 199 919 739 ga gg Вþ qq ŏ ΟŊ Óγ δ ò

Search completed: December 10, 2001, 19:17:34 Job time: 20408 sec

179, App 1, Appli 3, Appli 1, Appli 1, Appli 23, Appl

10, Appl 3, Appli 3, Appli 3, Appli 1, Appli

```
Sequence 1, At
Sequence 27, R
Sequence 27, R
Sequence 2, At
Sequence 2, At
Sequence 3, At
                                                                                                                                                                                                                Sequence 1, Sequence 23,
                                                                                                          Sequence 3, Sequence 3,
                                                                                                                                                                                                                                            Sequence Sequence S
                                                                                                                                     Sequence
Sequence
Sequence
                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 1105;
                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: HASTINGS, GREGG,
APPLICANT: PATRICK J. DILLON
TITLE OF INVENTION: HUMAN NEURONAL ATTACHMENT FACTOR-1
NUMBER OF SEQUENCES: 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFWWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
FILING DATE: 11-FEB-1997
CLASSIFICATION: 536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 1105; DB 2;
Pred. No. 1.9e-200;
US-08-407-875-1
US-08-980-832-1
US-08-980-832-1
US-08-576-626A-2
US-09-130-114-2
US-09-43-288-10
US-09-402-262-3
US-08-508-004-3
US-08-402-066-3
US-08-402-066-3
US-08-402-066-3
US-08-307-21-1
US-09-390-721-1
US-09-390-721-1
US-09-804-27C-1
US-09-804-27C-1
US-09-105-537-3
US-09-105-537-3
                                                                                                                                                                                                                                                                                                      ALIGNMENTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     E: HUMAN GENOME SCIENCES, INC 9410 KEY WEST AVENUE
                                                                                                                                                                                                                                                                                                                                                                           Sequence 1, Application US/08799173A Patent No. 5871969 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATTLING DATE: 11-FEB-1997
CLASSIFICATION 536
ATTORNEY/AGENT INFORMATION:
NAME: BROOKES, ANDERS A.
REGISTRATION NUMBER: 36,373
REFRENCE/CDOCKET NUMBER: PF226
"HILGCOMMUNICATION INFORMATION:
TELEPHONE: (301) 309-8512
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS: LENGRATION CONCLETED NO: 1:
SEQUENCE CHARACTERISTICS: LENGRATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS: SINGLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               100.0%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TOPOLOGY: linear MOLECULE TYPE: DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       mat_peptide
19..963
   2961
8625
11233
8051
1931
1600
15664
15664
15664
15664
                                                                                                                                                                 5045
5045
2353
43280
3027
1281
13613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ZIP: 20850
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         19..1011
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CITY: ROCKVILLE STATE: MD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ADDRESSEE:
STREET: 94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LOCATION:
                                                                                                                                                                                                                                                                                                                                                              US-08-799-173A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COUNTRY:
 US-08-739-173A-
   RESULT
                                                                                                                       (without alignments)
2787.460 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 1, Appli
Sequence 1, Appli
Sequence 1, Appli
Sequence 15, Appl
Sequence 16, Appl
Sequence 17, Appli
Sequence 9, Appli
Sequence 11, Appli
Sequence 11, Appli
Sequence 11, Appli
Sequence 11, Appli
Sequence 13, Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Appl
Appl
Appli
Appli
Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                1 cgctgctcctgccgggtgat......tgcaggcggccgagggcaca 1105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 43,
Sequence 59,
                                                                                                       December 10, 2001, 13:37:26; Search time 89.78 Seconds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 1
Sequence 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                        Issued_Patents_NA:*

... /cgn2_6/ptodata/2/ina/5A_COMB.seq:*
... /cgn2_6/ptodata/2/ina/5B_COMB.seq:*
... /cgn2_6/ptodata/2/ina/6A_COMB.seq:*
... /cgn2_6/ptodata/2/ina/B_COMB.seq:*
... /cgn2_6/ptodata/2/ina/PcTUS_COMB.seq:*
... /cgn2_6/ptodata/2/ina/pcTUS_COMB.seq:*
... /cgn2_6/ptodata/2/ina/pcTUS_COMB.seq:*
                 GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-08-799-173A-1

US-09-371-696-1

US-09-022-238-1

US-08-799-173A-15

US-08-799-173A-16

US-08-799-173A-16

US-08-799-173A-16

US-08-799-173A-16

US-08-313-28BB-9

PCT-US-93-03164-9

US-07-862-021B-11

US-07-862-021B-11

US-07-862-021B-11

US-07-862-021B-11

US-08-313-28BB-13

PCT-US-08-313-28BB-13

US-09-105-390-69

US-09-105-390-69

US-09-105-390-69

US-08-115-468-1

US-08-115-468-1

US-08-371-696-1
                                                                                                                                                                                                                                                                                                      al number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                          351203 seqs, 113238999 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-09-126-280-3
US-09-126-280-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                              Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                            - nucleic search, using sw model
                                                                                                                                                                                                                            IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                  Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                  US-09-170-042A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query
Match Length DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           506
316
316
316
4029
4029
3226
3226
3226
11105
1105
1105
2810
30001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1105
1051.8
343.8
339
300
202.6
202.6
                                                                                                                                                                             Perfect score:
Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       70
70
70
61.6
61.6
61.6
57.2
57.2
                                                                                                                                                                                                                              Scoring table:
                                                                           OM nucleic
                                                                                                                                                                                                                                                                                                                                                                                                                                           Database :
                                                                                                                                                                                                                                                                          earched:
                                                                                                        Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .
9
```

```
APPLICANT: Syrkowski, Arthur J.
APPLICANT: Syrkowski, Arthur J.
APPLICANT: Syrkowski, Arthur J.
APPLICANT: Yang, Meiheng
TITLE OF INVENTION: NOVEL NPG-1 GENE THAT IS DIFFERENTIALLY EXPRESSED IN PROSTATE
TITLE OF INVENTION: TUMORS
FILE REFERENCE: 01948/053002
CURRENT APPLICATION NUMBER: US/09/371,696
CURRENT PILING DATE: 1999-08-10
EARLIER PLICATION NUMBER: US 09/022,238
EARLIER PLICATION NUMBER: US 09/022,238
EARLIER PLILNG DATE: 1996-02-11
EARLIER FILING DATE: 1996-05-10
NUMBER OF SEQ ID NOS: 5
SOFTWARE: FastSEQ for Windows Version 3.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gccgcgcatagctccgactacagcatgtggaggaagaaccagtacgtcagtaacgggctg 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  cagacgicggcggagctggaggigcagcgcaggcactcgctggitcicgittgtggigcgc 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gaggegetgeagagegtgeaegeggtgtttteggegeeeegeegteeeeageggeaeegggg 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gcettececaageagtacecectgtteegeeecetgegeagtggtettegetgetgggg 457
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 egetgetectgeegggtgatggaaaaccecageceggeeggeegtgggeaaggeete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               218 cgctgctcctgccgggtgatggaaaaccccagcccggccgccgccttgggcaaggccctc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gectteeccaagcagtaccecetgtteegeececetgeecagtggtettegetgetgggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           458 gccgcgcatagctccgactacagcatgtggaggaagaaccagtacgtcagtaacgggctg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  cgcgactttgcggagcgcgaggcctgggcgctgatgaaggagatcgaggcggggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                    э;
                                                                                                                                                                                                                                                                                                                                                                                                                             Length 1779
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                             DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   17;
                                                                                                                                                                                                                                                                                                                                                                                                                            95.2%; Score 1051.8; DB 4
98.2%; Pred. No. 2.1e-190;
ive 0; Mismatches 17;
           Sequence 1, Application US/09371696
Patent No. 6287777
                                                                                                                                                                                                                                                                                                                                                                                  G
                                                                                                                                                                                                                                                                                                                                                                                  = A, T, C or
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches 1085; Conservative
                                                                                                                                                                                                                                                                                                                        FEATURE:
NAME/KEY: CDS
LOCATION: (236)...(1225)
NAME/KEY: misc_feature
                                                                                                                                                                                                                                                                                                    TYPE: DNA
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                    COCATION: (1)...(1779)
CTHER INFORMATION: n = US-09-371-696-1
                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                       LENGTH: 1779
                                                                   RESULT 2
US-09-371-696-1
                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                             SEO ID NO 1
                                                                                                                                                                                                                                                                                                                                                                                                                                          Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  421
           Qγ
                           op.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                qα
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           pp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   qc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ·δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             240
                                                                                                                                                                                                                                                                                                                                               480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 180
                                                                                                                                                                                                         300
                                                                                                                                                                                                                                                      360
                                                                                                                                                                                                                                                                             360
                                                                                                                                                                                                                                                                                                    420
                                                                                                                                                                                                                                                                                                                        420
                                                                                                                                                                                                                                                                                                                                                                      480
                                                                                                                                                                                                                                                                                                                                                                                                                                        900
                                                                                                                                                                                                                                                                                                                                                                                                                                                             900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ccgctggactgcgaggtctccctgtggtcgtcctgggggactgtgcggaggccactgtggg 900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      960
                                                                   tgegeteteeteetggecacteteggegeegeeggeeageetettgggggagagteeate 120
 Gaps
                      9
                                             9
                                                                                                                                                                                                        121 TGTTCGCCGGAGCCCTGGCCAAATACAGCATCACCTTCACGGGCAAGTGGAGCCAAGAG
                                                                                                                                                             gccttccccaagcagtacccctgttccgccccctgcccagtggtcttcgctgctgggg
                                                                                                                                                                                                                                                                                                                                                           ttcaccttctcctcccccaacttcgccaccatcccgcaggacacggtgaccgagataacg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 cgctgctcctgccgggtgatggaaaaccccagcccggccgccgcctgggcaaggccctc
                                                                                                                tgticcgccagagccctggccaaatacagcatcaccttcacgggcaagtggagccagacg
                                                                                                                                                                                  181 GCCTTCCCCAAGCAGTACCCCCTGTTCCGCCCCCTGCCCAGTGGTCTTCGCTGCTGGGG
                                                                                                                                                                                                                                                                                                                                                cagacgtcggcggagctggaggtgcagcgcactcgctggtctcgtttgtggtgcgc
                                                                                                                                                                                                                                                                                                                                                                                          481 atcgtgcccagccccgactggttcgtgggcgtggacagcctggacctgtgcgacggggac
                                                                                                                                                                                                                                                                                                                                                                                                                                          901 aggetegggaceaagageaggactegetaegteegggteeageeegeeaaeaaegggage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           601 TTCACCTTCTCCCCCCAACTTCGCCACCATCCCGCAGGACACGGTGACCGAGATAACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gccccagtcctgcccagcagggacaatgagattgtagacagcgcctcagttccagaaacg
;
 Indels
.;
0
 Mismatches
ö
Conservative
Matches 1105;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        841
                                                                   19
                                                                                                               121
                                                                                                                                                             181
                                                                                                                                                                                                                                                     301
                                                                                                                                                                                                                                                                                                                        361
                                                                                                                                                                                                                                                                                                                                               421
                                                                                                                                                                                                                                                                                                                                                                                                                                        541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1021
                                                                                                                                                                                                                                                                                                   361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           781
                                                                                     QQ
                                                                                                                               QQ
                                                                                                                                                                             8
                                                                                                                                                                                                                                                                           9
                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                               a
                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                           QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                       a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                      ò
                                        g
                                                                 οy
                                                                                                              ò
                                                                                                                                                       ò
                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
```

Gaps 9 517

360

577

637

697

Gaps

```
APPLICANT: Sytkowski, Arthur J. and Yang, Meiheng
TITLE OF INVENTION: A novel NPG-1 Gene that is differentially expressed in NUMBER OF SEQUENCES: 5
CORRESPONDENCE ADDRESS:
ADDRESSEE: LAHIVE & COMMITTEE OF SECURITY AND STREET OF SECURITY AND STREET OF SECURITY AND STREET OF SECURITY AND STREET OF STREET OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gtcctggggactgtgcggaggccactgtgggaggctcgggaccaagagcaggactcgcta 929
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          630 catecegeaggacaeggtgacegagataaegteeteeteetecageeaeeeggeeaaete 689
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gegacagageececagggeetteateecteegeeceagteetgeecageaggaeaatga 809
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         296 GTCCTGGGGACTGTGCGGAGGCCACTGTGGGAGGCTCGGGTCCAAGAGCAGGACTCCGTA 355
                                                                                                                                                                                                                                                                                                                                                                                                                                                               570 gtacccctacgacgccgggacggacagcggcttcaccttctcccccaacttcgccac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       690 cttctactacccgcgggctgaaggccctgcctcccatcgccagggtgacactggtgggct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .;
2
                                                                                                                                                                                                                                                                                                                                      Length 400;
                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       356 CGCCCGGGTCCAGCCCGCCAACGGGAGCCCCTGCCCCGAGCT 400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            930 egiccgggiccagecegecaacaacgggagececigeceegaget 974
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOFTWARE: Patentin Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                 Score 343.8; DB 1;
Pred, No. 5.2e-57;
0; Mismatches 7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER: US 08/644,326 FILING DATE: 10-MAY-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: US/09/022,238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ADDRESSEE: LAHIVE & COCKFIELD, STREET: 28 State Street
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-022-238-1; Sequence 1, Application US/09022238; Patent No. 6177244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC COMPATIBLE
  TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                    31.1%;
97.0%;
                  TELEPHONE: (617)227-7400
TELEFAX: (617)227-5941
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
                                                                                                                             LENGTH: 400 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                    393; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Massachusetts
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER: IBM PCOPERATING SYSTEM:
                                                                                                                                                                                                                                MOLECULE TYPE: CDNA
                                                                                                                                                                                                        linear
                                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Boston
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         02109
                                                                                                                                                                                                        TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COUNTRY:
                                                                                                                                                                                                                                                           US-08-644-326-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CITY:
STATE:
                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   750
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           870
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         pp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          òγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: Arthur J. Sytkowski and Meiheng Yang
TITLE OF INVENTION: Methods for identifying Differentially Expressed Genes and di
TITLE OF INVENTION: genomic nucleic acid sequences
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1055 ccgctggactgcgaggtctccctgtggtcgtcctgggggactgtgcggaggccactgtggg 1114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1115 aggetegggtecaagageaggaeteegtaegeeegggteeageeegeeaacaaegggage 1174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ccetgccccgagctcgaagaagaggctgagtgcgtccctgataactgcgtctaagaccag 1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ccgctggactgcgaggtctccctgtggtcgtcctgggggactgtgcggaggccactgtggg 900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        901 aggetegggaceaagageaggaetegetaegteegggteeageeegeeaaeaaegggage 960
  atcgtgcccagccccgactggttcgtgggcgtggacagcctggacctgtgcgacggggac 540
                          ttcaccttctccccccaacttcgccaccatcccqcaqqacacqqtqaccqaqataacq 660
                                                                                                                                                                                                                                tectecteteceagecacceggccaactecttetactaccegeggetgaaggeeetgeet 720
                                                                                                                                                                                                                                                                                                                                    cccatcgccagggtgacactggtgcggctgcgacagagccccagggcettcatccctcc 780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SOFTWARE: Patentin Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/644,326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        E: LAHIVE & COCKFIELD 60 State Street, Suite 510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1295 catgctgcaggcggccgagggcaca 1319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 catgctgcaggcggccgagggcaca 1105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE/DOCKET NUMBER: NER-262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               equence 1, Application US/08644326 atent No. 5804382 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            29,325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NAME: Ralph A. Loren REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CITY: Boston
STATE: Massachusetts
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NUMBER OF SEQUENCES: 7
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   02109-1875
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STREET: 60 S1
CITY: Boston
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -08-644-326-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1175
481
                                                                                                   541
                                                                                                                                                                                                        601
                                                                                                                                                                                                                                                                                                                                                            878
                                                                                                                                                                                                                                                                                                                                                                                                                                                               936
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              961
                                                                                                                                                                                                                                                                                                         661
                                                                                                                                                                                                                                                                                                                                                                                                               721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                g
                                                                                                   ò
                                                                                                                                                g
                                                                                                                                                                                                   οy
                                                                                                                                                                                                                                                      q
                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                      q
                                                                                                                                                                                                                                                                                                                                                                                                               ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              òγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ολ
```

pros

```
Patentin Release #1.0, Version #1.30
                                                                                         ATTORNEY/AGENT INFORMATION:
NAME: BROOKES, ANDERS A.
REGISTRATION NUMBER: 36,373
                                                                                                                                                REFERENCE/DOCKET NUMBER: PF
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                    TELEPHONE: (301) 309-8504
TELEPAX: (301) 309-8512
INFORMATION FOR SEQ ID NO: 15:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                           MOLECULE TYPE: DNA (genomic)
                                                   11-FEB-1997
             CURRENT APPLICATION DATA:
APPLICATION NUMBER: US,
FILING DATE: 11-FEB-199
                                                                                                                                                                                                                                                               LENGTH: 506 base pairs TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches 368; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   433 gagctggaggtgca 446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      422 GNTTTNNAGTTTNA 435
                                                                                                                                                                                                                                                                                                                           linear
                                                                                                                                                                                                                                                                                                                                                                                                                                        Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CITY: ROCKVILLE STATE: MD
                                                                         CLASSIFICATION:
                                                                                                                                                                                                                                                                                                     STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ADDRESSEE:
                                                                                                                                                                                                                                                                                                                       TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                              US-08-799-173A-15
 SOFTWARE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ^{\circ}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              . q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                        4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gcgacagagccccagggccttcatccctcccgccccagtcctgcccagcagggacaatga 809
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         60 CATCCCGCA-GACACGGTGACCGAGATAACGTCCTCTCTCCCCAGCCACCCGGCCAGCTC 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            690 ettetaetaeeegegetgaaggeeetgeeteeeategeeagggtgaeaetggggget 749
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  119 CTTCTACTACCCGCGCGCGGCTGAAGGCC--TGCTCCCCATCGCCAGGGTGACACTGGTGCGGCT 176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   570 gtacccctacgacgccgggacggacagcgcttcaccttctccccccaacttcgccac 629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   630 catcccgcaggacacggtgaccgagataacgtcctctctcccagccacccggccaactc 689
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         177 GCGACAGAGCCCCAGGGCCTTCATCCCTCCGGCCCAGTCCTGCCCAGCA-GGACAATGC 235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        870 gtcctggggactgtgcgaggccactgtgggaggctcgggaccaagagcaggactcgcta 929
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              296 GTCCTGGGGACTGTGCGGAGGCCACTGTGGGAGGCTCGGGTCCAAGAGCAGGACTCCGTA 355
                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 GTACCCCTACGACGCCGGGAC-GACAGCGGCTTCACCTTCTCCTCCCCCAACTTCGCCAC 59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gattgtagacagcgcctcagttccagaaacgccgctggactgcgaggtctccctgtggtc
                                                                                                                                                                                                                                                                                                                                                                                                                      5;
                                                                                                                                                                                                                                                                                                                                                                            30.7%; Score 339; DB 4; Length 400; 96.3%; Pred. No. 4.2e-56; Live 0; Mismatches 10; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: HASTINGS, GREGG,
APPLICANT: PATRICK J. DILLON
TITLE OF INVENTION: HUMAN NEURONAL ATTACHMENT FACTOR-1
NUMBER OF SEQUENCES: 18
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       930 cgtccgggtccagccgccaacaacgggagcccctgccccgagct 974
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ADDRESSEE: HUMAN GENOME SCIENCES, INC.
STREET: 9410 KEY WEST AVENUE
               NAME: Maravic-Magovcevic, Ivana
REGISTRATION NUMBER: P-43,338
REFERENCE/DOCKET NUMBER: NER-262CP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 15, Application US/08799173A Patent No. 5871969 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PC-DOS/MS-DOS
                                                                 TELECOMMUNICATION INFORMATION:
TELEPHONE: (617)227-7400
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 400 Base pairs
TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                  est Local Similarity 96.39
Matches 390; Conservative
                                                                                                                                                                                                                            TOPOLOGY: linear MOLECULE TYPE: CDNA
                                                                                                                                                                                                                                                                                   CDS
3..398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ROCKVILLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                20850
                                                                                                                                                                                                                                                                                 NAME/KEY:
LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-08-799-173A-15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COUNTRY:
                                                                                                                                                                                                                                                                                                                       US-09-022-238-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STATE:
                                                                                                                                                                                                                                                                                                                                                                                uery Match
                                                                                                                                                                                                                                                                   FEATURE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CITY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        750
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
```

```
253 tecgaetacageatgtggaggaagaaecagtacgteagtaaegggetgegegaetttgeg 312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               133 gccctggccaaatacagcatcaccttcacgggcaagtggagccagacggccttccccaag 192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           193 cagtaccccctgttccgccccctgcccagtggtcttcgctgctggggggccgcgcatage 252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   304 GAGCGGCGAG-GCCTNGGNCGTTGATGAAGGAGATCCGGGNGGCGGGGGGGGCGTNCAAN 362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  363 AGGTGNCAAGAGTTNTTTTCGGGGCCCG-GTTCCCCAANGGNAACNGGNAAACGTTGGGG 421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             13 cgggtgatggaaaaccccagcccggccgccgccctgggcaaggccctctgcgctctcctc 72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6 CGGCANAGGNNAAACCCCAGCCCGGCTGCCGCCCTGGGCCAAGGCCTNCTGCGCTCTCCTC 65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 506;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     62; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   18-08-799-173A-16
Sequence 16, Application US/08799173A
Sequence 16, Application US/08799173A
PATENTEN STATEMENT STA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             27.1%; Score 300; DB 2;
84.8%; Pred. No. 9.5e-49;
tive 0; Mismatches 62;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      E: HUMAN GENOME SCIENCES, INC 9410 KEY WEST AVENUE
US/08/799,173A
```

4;

```
COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STATE: New York COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               New York
                                                                                           CLASSIFICATION:
                                                                                                                                                                                                                                                                             TYPE: nucleic
STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             10112
                                                                                                                                                                                                                                                                                                                                             US-08-799-173A-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-07-862-021B-9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CITY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            qn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ΩŸ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              512 tggacagcctggacc---tgtgcgacggggaccgttggcgggaacaggcggctggacc 568
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               137 TGGACAGCCTGGACTGTGANAACGGGACCTTTNGCGNGNAAACAGGCGNCGTTGACC 296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   177 GGCACTCGCTGGTCTCGTTTTGTGCTGCGCATCGTGCCCAGCCCCGACTGGTTCGTGGCG 236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                332 cgctgatgaaggagatcgaggcggcgggggggggggcgctgcaggcgtgcacgcggtgtttt 391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              392 eggegecegecgtececageggeacegggeagaegteggeggagetggaggtgeagegea 451
                                                                                                                                                                                                                                                                                                                                                                                                                                                               7; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                            Score 202.6; DB 2; Length 316;
Pred. No. 2.1e-30;
0; Mismatches 39; Indels 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GENERAL INFORMATION:
APPLICANT: HASTINGS, GREGG,
APPLICANT: PATRICK J. DILLON
TITLE OF INVENTION: HUMAN NEURONAL ATTACHMENT FACTOR-1
NUMBER OF SEQUENCES: 18
CORRESPONDENCE ADDRESS:
                                                               PatentIn Release #1.0, Version #1.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 E: HUMAN GENOME SCIENCES, INC. 9410 KEY WEST AVENUE
                                                       CURRENT APPLICATION DATA:
CURRENT APPLICATION NUMBER: US/08/799,173A
APPLICATION NUMBER: 11-FEB-1997
FILING DATE: 11-FEB-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 17, Application US/08799173A Patent No. 5871969
               MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                           ATTORNEY/AGENT INFORMATION:
NAME: BROOKES, ANDERS A.
REGISTRATION NUMBER: 36,373
REFERENCE/DOCKET NUMBER: PF226
TELECOMMUNICATION INFORMATION:
TELEPHONE: (301) 309-8514
TELEFAX: (301) 309-8512
INFORMATION FOR SEQ ID NO: 16:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                297 TGTANCCCTACGACGNCGGG 316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 569 tgtaccctacgacgccggg 588
                                                                                                                                                                                                                                                                                                                                                              ; MOLECULE TYPE: DNA (genomic) US-08-799-173A-16
                                                                                                                                                                                                                                                                                                                                                                                                                                18.3%;
85.6%;
                                                                                                                                                                                                                                                                             SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match 18,38
Best Local Similarity 85.68
Matches 274; Conservative
                                                                                                                                                                                                                                                                                                  LENGTH: 316 base pairs
                                                                                                                                                                                                                                                                                                                                 single
COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                               nucleic acid
                                                                                                                                                                                                                                                                                                                                                linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CITY: ROCKVILLE STATE: MD
                                                                                                                                                                                                                                                                                                                             STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ZIP: 20850
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-08-799-173A-17
                                                                                                                                                                                                                                                                                                                                                  TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
```

```
332 egetgatgaaggagategaggeggeggggggaggegetgeagagegtgeaegeggtgtttt 391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           392 eggegecegeegteeceageggaacegggeagaegteggeggagetggaggtgeagegea 451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 316;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: Jessell, Thomas M
APPLICANT: Klar, Avihu
TITLE OF INVEWTION: CLONING, EXPRESSION AND USES OF A
TITLE OF INVENTION: NOVEL SECRETED PROTEIN, F-SPONDIN
NUMBER OF SEQUENCES: 20
CORRESPONDENCE ADDRESS:
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match 18.3%; Score 202.6; DB 2; Best Local Similarity 85.6%; Pred. No. 2.1e-30; Matches 274; Conservative 0; Mismatches 39;
                                                                                                                           APPLICATION NUMBER: US/08/799,173A FILLING DATE: 11-FEB-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ; Sequence 9, Application US/07862021B
; Patent No. 5279966
                                                                                                                                                                                                                                              REFERENCE/DOCKET NUMBER:
TELECOMMUNICATION INFORMATION:
TELEFENCE (301) 309-8504
TELEFENCE (301) 309-8504
INFORMATION FOR SEQ ID NO: 17:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ADDRESSEE: Cooper & Dunham STREET: 30 Rockefeller Plaza
                                                                                                                                                                                     ATTORNEY/AGENT INFORMATION:
NAME: BROOKES, ANDERS A.
REGISTRATION NUMBER: 36,373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        297 TGTANCCCTACGACGNCGGG 316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                569 tgtacccctacgacgccggg 588
                                                                                                                                                                                                                                                                                                                                                                                                                                            TOPOLOGY: linear MOLECULE TYPE: DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                              LENGTH: 316 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
```

Patent.No. 5750502

```
3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      993 CAAGCAAGTIGCIGAACTIGGCICACCAGIAAAAAIGGAGGAAGAAAIICGACAACAGAG 1052
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1053 TGATGAAGTCCTCACTGTCATCAAAGCCAAAGCCCAGTGGCCATCCTGGCAGCCTGTCAA 1112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1113 TGTGAGAGCAGCACCCTCAGCCGAATTCTCAGTGGACAGGACACGCCACTTGATGTCCTT 1172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1233 CACCAAGGAGTGTGGGTGGTGGTGGTGGTGCTGAGTTCCCTGGGATGCTGG 1292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       *120 ctgttccgccagagccctggccaaatacagcatcaccttcacgggcaagtggagccagac 179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     180 ggccttccccaagcagtaccccctgttccgccccctgcccagtggtcttcgctgggg 239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 879 GACTCATCCAAAGGATTACCC----TCGTCGGGCTAATCACTGGTCTGCCATCATTGG 932
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 240 ggccgcatagctccgactacagcatgtggaggaagaaccagtacgtcagtaacgggct 299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               933 CGGATCCCACTCCAAGAACTACGTGCTGTGGGAGTACGGAGGGTATGCCAGTGAAGGGGT 992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 300 gogogactttgcggagcgcggcgagcctgggcgctgatgaaggagatcgaggcggcgg 359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               360 ggaggcgctgcagagcgtgcac-----gcggtgttttcggcgcccgccgtccccag 410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             411 cggcaccgggcagacgtcggcggagctggaggtgcagcgcaggcactcgctggtctcgtt 470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        819 CIGCIGCGCTGCGGAACTGCCAAGTACAGACTCACGTTTTATGGGAACTGGTCGGAGAA 878
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             471 tgtggtgcgcatcgtgcccagccccgactggttcgtgggcgtggacagcctggacctgtg 530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           531 cgacggggaccgttggcgggaacag---gcggcgctggacctgtacccctacgacgcgg 587
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       588 gacggacatcaccttctcctccccaacttcgccaccatcccgcaggaca 643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 4029;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6.3%; Score 70; DB 1; Length 4029
50.0%; Pred. No. 2.4e-05;
Live 0; Mismatches 250; Indels
                                                                    SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/862,021B
FILING DATE: 19920405
CLASSIFICATION: 435
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                             REFERENCE/DOCKET NUMBER: 40028
TELECOMMUNICATION INFORMATION:
TELEFAN. (212) 977-9550
TELEFAN. 42253 COOP UI
INFORMATION FOR SEO ID NO: 9:
SEQUENCE CHARACTERISTICS:
LENGTH: 4029 base pairs
TYPE: NUCLEIC ACID
                                                                                                                                                                                      ATTORNEY/AGENT INFORMATION:
NAME: White, John P
REGISTRATION NUMBER: 28,678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity 50.08
Matches 268; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CDS
226..2647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TOPOLOGY: linear MOLECULE TYPE: CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ; LOCATION:
US-07-862-021B-9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          입
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
```

Sequence 9, Application US/08313288B

RESULT 9 US-08-313-288B-9

```
1113 TGTGAGAGCAGCACCCTCAGCCGAATTCTCAGTGGACAGGACACGCCACTTGATGTCCTT 1172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               993 CAAGCAAGTTGCTGAACTTGGCTCACCAGTAAAATGGAGGAAGAAATTCGACAACAGAG 1052
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1053 TGATGAAGTCCTCACTGTCATCAAAGCCAAAGCCCAGTGGCCATCCTGGCAGCCTGTCAA 1112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 120 ctgttccgccagagccctggccaaatacagcatcaccttcacgggcaagtggagccagac 179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                180 ggccttccccaagcagtacccctgttccgcccctgcccatggtcttcgctgctggg 239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              879 GACTCATCCAAAGGATTACCC----TCGTCGGGCTAATCACTGGCTGCCATCATTGG 932
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        240 ggccgcgcatagctccgactacagcatgtggaggaagaaccagtacgtcagtaacgggct 299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         933 CGGATCCCACTCCAAGAACTACGTGCTGTGGGAGTACGGAGGTATGCCACTCAAGAGGGT 992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                300 gcgcgactttgcggagcgcgaggcctgggcgctgatgaaggagatcgaggcggcggg 359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   360 ggaggcgctgcagagcgtgcac-----gcggtgttttcggcgcccgccgtccccag 410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           411 cggcaccgggcagacgtcggcggagctggaggtgcagcgcaggcactcgctggtctcgtt 470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           471 tgtggtgcgcatcgtgcccagcccgactggttcgtgggcgtggacagcctggacctgtg 530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            819 CIGCIGCGCCTGCGGAACTGCCAAGTACAGACTCACGTTTTATGGGAACTGGTCGGAGAA 878
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match 6.3%; Score 70; DB 1; Length 4029; Best Local Similarity 50.0%; Pred. No. 2.4e-05; Matches 268; Conservative 0; Mismatches 250; Indels
                     APPLICANT: Jessell, Thomas M. and Avihu Klar
TITLE OF INVENTION: CLONING, EXPRESSION AND USES OF A
TITLE OF INVENTION: NOVEL SECRETED PROTEIN, F-SPONDIN
                                                                                                                                                                                                                                                                                                                                                                                                                       SOFTWARE: Patentin Release #1.0, Version #1.30 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     40028-A-PCT-US
                                                                                                                                                         ADDRESSEE: Cooper & Dunham LLP
STREET: 1185 Avenue of the Americas
CITY: New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER: US/08/313, 288B
                                                                                                                                                                                                                                                                                                                                                                                                    PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    January 5, 1995
                                                                                                                                                                                                                                                                                                                                                                 COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NAME: White, John P.
REGISTRATION NUMBER: 28,678
REPERENCE/DOCKET NUMBER: 406
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELEPHONE: (212) 278-0400
TELEFAX: (212) 391-0526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                              Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             INFORMATION FOR SEQ ID NO: 5
SEQUENCE CHARACTERISTICS:
LENGTH: 4029 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TYPE: nucleic acid_STRANDEDNESS: single
                                                                                                     NUMBER OF SEQUENCES: 2
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                  COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CDS
226..2647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TOPOLOGY: linear MOLECULE TYPE: CDNA
                                                                                                                                                                                                                                     New York
GENERAL INFORMATION:
APPLICANT: Jessel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FILING DATE: JECLASSIFICATION:
                                                                                                                                                                                                                                                                 USA
                                                                                                                                                                                                                                                                                                                                           MEDIUM TYPE:
                                                                                                                                                                                                                                                                                         10036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-08-313-288B-9
                                                                                                                                                                                                                                                                 COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
```

3,

```
(without alignments)
7704.941 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AL551401 AL551401
AL551786 AL551786
AL554806 AL554816
AL543187 AL543187
AL543187 AL550317
AL547912 AL547912
AL547912 AL547912
AL564981 AL564981
AL564981 AL564981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AL552365 AL552365
AL554923 AL554923
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                        l cgctgctcctgccgggtgat.......1gcaggcggccgagggcaca 1105
                                                                   December 10, 2001, 13:37:25; Search time 1541.1 Seconds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Description
                                                                                                                                                                                                                       22703874
GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                11351937 segs, 5372889281 residues
                                                                                                                                                                                                                      al number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SUMMARIES
                                                                                                                                                                                                                                                                               Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AL546511
AL552365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AL551401
AL551786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AL554806
AL543187
                                              OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AL554923
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AL550317
                                                                                                                                                               IDENTITY_NUC Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ΠD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               em_gss_other:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           em_gss_pro: *
em_gss_rod: *
em_gss_vrt: *
                                                                                                                                                                                                                                               Minimum DB seq length: 0 Maximum DB seq length: 20000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          em_gss_hum:*
em_gss_inv:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               em_gss_fun:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   em_gss_pln:*
                                                                                                                   US-09-170-042A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query
Match Length DB
                                                                                                                                                                                                                                                                                                                                                                em_estin:*
em_estom:*
em_estpl:*
em_estba:*
em_estro:*
em_estro:*
                                                                                                                                                                                                                                                                                                                                        em_estfun:*
em_esthum:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                 gb_est1:*
gb_est2:*
gb_htc:*
gb_gss:*
                                                                                                                                                                                                                                                                                                                                EST:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           885.6
777.9
775.8
775.8
669.0
663.5
662.0
559.1
                                                                                                                             1105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     762.6
701.6
685.2
653.6
621.4
613.8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             837.2
826.8
                                                                                                                  Title:
Perfect score:
                                                                                                                                                               Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     861.2
                                                                                                                                                                                                                                                                                                                                 Database :
                                                                                                                                                                                                   earched:
                                                                                                                                          Sedneuce:
                                                                    Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Š
```

AL532820 AL564981 AL551123

υ

AL547912

00.4 54.3 682 10 BEA07510 AL574221 AL57	equencag Web: ww " " T 6; Sit coligo(d) ed cDN nd Eco F malized malized na 9800 F
1025 10 904 10 914 10 1011 10 987 10 987 10 987 10 987 10 986 10 987 10 1046 10 1046 10 1046 10 1045 10 831 10 831 10 841 10 865 10 972 10 972 10 973 10 974 11 975 11 977 10 978 11 978 11	January Construction of the Construction of the Not I and Econ the Not I and Econ Construction of the Not I and Econ Construction of the Not I and Econ Constructed by Life Technologies. Contact the Not I and Econ Constructed by Life Technologies. Contact Construction of the Not I and Econ Note: Note
10252 90443 1011 1011 1011 9873 9874 9871 9871 9871 9871 9872 9873 9773	e Na cedo osco osco Agua //Qua CSOD CSOD tipe" in do nto nto nto on o
그 그 그 그 그 그 그 그 그 그 그 그 그 그 그 그 그 그 그	Genoscope - Centre N OG EVRY Ce Gref genosc Location/Qu 1. 963 /organism="red"ar /db_xref="t"/db_xref="t"/db_xref="tolone="tolo
93 53.7 11 46.2 11 46.2 14 44.7 14 44.7 15 48.3 17 48.3 17 48.3 17 48.3 18 44.5 18 48.3 18 18.3 19 19.8 19 19.8 19 19.8 10 19.8 11 (Arses) 11 (Arses) 12 (Arses) 13 (Arses) 14 (Arses) 15 (Arses) 16 (Arses) 17 (Arses) 18 (Arses) 19 (Arses) 10 (Arses) 11 (Arses) 11 (Arses) 11 (Arses) 11 (Arses) 11 (Arses) 11 (Arses) 11 (Arses) 11 (Arses) 11 (Arses) 12 (Arses) 13 (Arses) 14 (Arses) 15 (Arses) 16 (Arses) 17 (Arses) 18 (Arses) 19 (Arses) 11 (Arses) 11 (Arses) 11 (Arses) 12 (Arses) 13 (Arses) 14 (Arses) 15 (Arses) 16 (Arses) 17 (Arses) 18 (Arses) 19 (Arses) 11 (Arses) 11 (Arses) 12 (Arses) 13 (Arses) 14 (Arses) 15 (Arses) 16 (Arses) 17 (Arses) 18 (Arses) 19 (Arses) 10 (Arses) 11 (Arses) 11 (Arses) 12 (Arses) 13 (Arses) 14 (Arses) 15 (Arses) 16 (Arses) 17 (Arses) 18 (Arses) 18 (Arses) 19 (Arses) 19 (Arses) 19 (Arses) 19 (Arses) 19 (Arses) 19 (Arses) 19 (Arses) 10 (Arses) 11 (Arses) 11 (Arses) 12 (Arses) 13 (Arses) 14 (Arses) 15 (Arses) 16 (Arses) 17 (Arses) 18 (Arses) 18 (Arses) 19 (Arses) 10 (Arses) 11 (Arses) 11 (Arses) 12 (Arses) 13 (Arses) 14 (Arses) 15 (Arses) 16 (Arses) 17 (Arses) 18 (Ar	integrate in the control of the cont
2000 2000	; 6 9 9
C 143 6 6 6 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	COMMENT SOURCE SOURCE

```
human.
           cc 962
                              962 CC 963
                                                                                                                                                                                                                                                           source
                                                                                                                                                                                                                                                                                                                                                                                                          BASE COUNT
ORIGIN
                                                                                    DEFINITION
                                                                                                                                             ORGANISM
                                                                                                                                                                                AUTHORS
TITLE
            961
                                                         RESULT ALS52365
                                                                                                       ACCESSION
                                                                                                                                                                                                   JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          303
                                                                                                                                                                       REFERENCE
                                                                                                                         KEYWORDS
                                                                                                                                                                                                                                                 FEATURES
                                                                                                                 VERSION
                                                                                                                                                                                                            COMMENT
                                                                                                                                    SOURCE
            ò
                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           op
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                            ..
H
                                                                                                                                                                     240
                                                                                                                                                                                                                                                 300
                                                                                                                                                                                                                                                                                                                                                                                                  540
                                                                                                                                 tgcgctctcctcctggccactctcggcgccgccggccgccagcctcttgggggagagtccatc 120
                                                                                                                                                                                                                                                         360
                                                                                                                                                                                                                                                                                              420
                                                                                                                                                                                                                                                                                                                                  480
                                                                                                                                                                                                                                                                                                                                                                               482
                                                                                                                                                                                                                                                                                                                                                                                                                   542
                                                                                                                                                                                                                                                                                                                                                                                                                                      009
                                                                                                                                                                                                                                                                                                                                                                                                                                                       602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 722
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        840
                                                                                                                                                   63 TGCGCTCTCCTCGTGGCCACTCTCGGCGCCCGGCCAGCCTCTTGGGGGGAGAGTCCATC 122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    782
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         842
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 960
                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   961
                                                                                             1 cgctgctcctgccgggtgatggaaaaccccagcccggccgccgccctgggcaaggccctc 60
                                                                                                      gccttccccaagcagtaccccctgttccgccccctgcccagtggtcttcgctgctgggg
                                                                                                                                                                                                                                                                                                                                                            atcgtgcccagccccgactggttcgtgggcgtggacagcctggacctgtgcgacggggac
                                                                                                                                                                                                                                                                                                                                                                                                                                     ccgctggactgcgaggtctccctgtggtcgtcctggggactgtgcggaggccactgtggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                aggctcgggaccaagagcaggactcgctacgtccgggtccagcccgccaacaacgggagc
                                                                                                                                                                                                                            183 GCCTTCCCCAAGCAGTACCCCCTGTTCCGCCCCCTGCGCAGTGGTCTTCGCTGCTGGG
                                                                                                                                                                                                                                                gccgcgcatagctccgactacagcatgtggaggaagaaccagtacgtcagtaacgggctg
                                                                                                                                                                                                                                                                                     cgcgactttgcggagcgcggcgaggcctgggcgctgatgaaggagatcgaggcgggggg
                                                                                                                                                                                                                                                                                                                         tectecteteceagecacceggecaactecttetactaccegeggetgaaggeeetgeet
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gccccagtcctgcccagcagggacaatgagattgtagacagcgcctcagttccagaaacg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                902 AGGTCGGGACCAAGAGCAGGACTCGCTACGTCCGGGTCCAGCCCGCCAAMAACGGGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                  ATCGTGCCCAGCCCCGACTGGTTCGTGGGCGTGGACAGCCTGGACCTGTGCGACGGGGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ttcaccttctcctcccccaacttcgccaccatcccgcaggacacggtgaccgagataacg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              843 CCGCTGGACTGCGAGGTCTCCTGTGGTCGTCGTGGGGACTGTGCGGRGG-CACTGTGGG
                                                                            ij
                                                        Length 963;
                    others
                                                                           Indels
                    ~
                                                       85.6%; Score 946; DB 10;
99.5%; Pred. No. 2.5e-158;
iive 2; Mismatches 2;
Email : fliang@lifetech.com URL :
http://fulllength.invitrogen.com"
345 c 312 g 151 t
                                                                        957; Conservative
                                                                 Similarity
                    Ø
                    153
                                                         Query Match
                                                                 Local
                                                                         Matches
                   BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                    303
                                                                                                                                  61
                                                                                                                                                                                                          181
                                                                                                                                                                                                                                               241
                                                                                                                                                                                                                                                                                    301
                                                                                                                                                                                                                                                                                                                       361
                                                                                                                                                                                                                                                                                                                                                                                                                  483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        783 (
                                                                                                                                                                                                                                                                                                                                                           421
                                                                                                                                                                                                                                                                                                                                                                                                 481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    723
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            841
                                                                                                                                                  q
                                                                                                                                                                                                                            g
                                                                                             ð
                                                                                                             g
                                                                                                                                                                                                                                                              qq
                                                                                                                                                                                                                                                                                                    QQ
                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                 ò
                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                  οy
                                                                                                                                                                                                                                                                                                                                                           õ
                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                      õ
                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                q
                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 a
```

```
/cloue_lb="LTI_NELOG_PL2"
/tissue_type="placenta"
/tissue_type="placenta"
/tissue_type="placenta"
/fissue_type="placenta"
/fis
                                                                                                                                                                                                                                                                                    Homo sapiens
Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                63 egeteteeteggeeaeteteggegegeeggeeggeeageetettggggggagagteeatetg 122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       123 ttccgccagagccctggccaaatacagcatcaccttcacgggcaagtggagccagacggc 182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             362
AL552365 934 bp mRNA EST 16-FEB-2001
AL552365 LTI_NFL006_PL2 Homo sapiens cDNA clone CSODI069YF21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Genoscope - Centre National de Sequencage
BP 191 91006 EVRY cedex - France
Email: segref@genoscope.cns.fr, Web : www.genoscope.cns.fr.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 934;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                       1 (bases 1 to 934)
Li,W.B., Gruber,C., Jessee,J. and Polayes,D.
Full-length cDNA libraries and normalization
Unpublished (2001)
Contact: Genoscope
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match 78.6%; Score 868.4; DB 10.
Best Local Similarity 98.6%; Pred. No. 1.4e-144;
Matches 924; Conservative 3; Mismatches 5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /db_xref="taxon:9606"
/clone="CS0DI069YF21"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
                                                                          prime, mRNA sequence.
AL552365
AL552365.1 GI:12891195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1. .934
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         149
```

.. 2

```
/db_xref="taxon:9606"
/clone="CSODI087Kill"
/clone_lib="LTI_NFL006_PL2"
/tissue_type="placetype" | /tissue_type="placetype="placetype="placetype="placetype="placetype="placetype="placetype="placetype="placetype="placetype="placetype="placetype="placetype="placetype="placetype="placetype="placetype="placetype="placetype="placetype="placetype="placetype="placetype="placetype="placetype="placetype="placetype="placetype="placetype="placetype="placetype="placetype="placetype="placetype="placetype="placetype="placetype="placetype="pla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 1009)
Li,W.B., Gruber,C., Jessee,J. and Polayes,D.
Uni,W.B., Gruber,C., Jessee,J. and normalization
Unpublished (2001)
Contact: Genöstope
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    842
                                                          542
   301 CGACTTTGCGGAG-GCGGGGGGCCTGGGCGTGATGAAGGAGATCGAGGCGGGGGGA 359
                                                                                                                                                                                                                           602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     722
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              782
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         423 gacgtcggcggagctggaggtgcagcgcaggcactcgctggtctcgtttgtggtgggcat 482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AL554923 1009 bp mRNA EST 16-FEB-2001
AL554923 LTI_NFL006_PL2 Homo sapiens CDNA clone CS0D1087YL11 :
AL554923
                                                                                                                                                                                                                                                                                                                                                                                                                                      778 CCCAGTCCTGCCCAGCAGGACAATGAGATTGTAGACAGCGCCTCAGTTCCAGAAACGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              cgtgcccagccccgactggttcgtgggcgtggacagcctggacctgtgcgacggggaccg
                                                                                                                                                                                                                                                                                                                                                       ctcctctcccagccacccggccaactccttctactacccgcggctgaaggccctgcctcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             658 CTCCTCTCCCAGCCACCCGGCCAACTCCTTCTACTACCCGCGGGCTGAAGGCCCTGCCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              783 cccagtcctgcccagcagggacaatgagattgtagacagcgcctcagttccagaaacgcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 843 gctggactgcgaggtctccctgtggtcgtcctgggggactgtgcggaggccactgtgggag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BP 191 91006 EVRY cedex - France
Email: segref@genoscope.cns.fr, Web : www.genoscope.cns.fr.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Genoscope - Centre National de Sequencage
BP 191 91006 EVRY cedex - France
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gctcgggaccaagagcaggactcgctacgtccgggtc 939
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AL554923.1 GI:12896167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .1009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                   483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           723
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       903
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     897
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AL554923
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Locus
a
                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                              δ
                                                                                                                            g
                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
```

```
vector. Library was normalized. Library was constructed by Life Technologies. Contact: Fong Liang Life Technologies. Contact: Fong Liang Life Technologies, a division of Invitrogen 9800 Medical Center Drive Enails: Maryland 20850, USA Fax: (1) 301 610 8371 Enail: fliang dilfetech.com URL: http://fulllength.invitrogen.com" 10 thers
                                                                                                                                                            ..
H
                                                                                                                                                                                240
                                                                                                                                                                                                                                                                                                                                                  359
                                                                                                                                                                                                                                                                                                                                                                           300
                                                                                                                                                                                                                                                                                                                                                                                      479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               539
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     539
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     599
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             720 teccategecagggtgacactggtgeggetgegacagagececagggeetteateeetee 779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     959
                                                                                                                                                                                                                                                                                                                                                                                                                        301 cgcgactttgcggagcgcggcgagcctgggcgctgatgaaggagatcgaggcggcggg 360
                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                        catogtgcccagcccgactggttcgtgggggtggacagcctggacctgtgcgacgggga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             cgccccagtcctgcccagcagggacaatgagattgtagacagcgcctcagttccagaaac
                                                                                                                                                                                                                                                                             tgttccgccagagccctggccaaatacagcatcaccttcacgggcaagtggagccagacg
                                                                                                                                                                                                                                                                                                                                                                           gccgcgcatagctccgactacagcatgtggaggaagaaccagtacgtcagtaacgggctg
                                                                                                                                                                                                                                                                                                                                                                                                                                       600 etteacettetectececeaaettegecaecatecegeaggaeaeggtgaeeggataae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gtcctcctctcccagccacccggccaactccttctactacccgcggctgaaggccctgcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            240 TGTWCCGCCAGAGCCCCGGCCAAATACAGCATCACCTTCACGGGCAAGTGGAGCCAGACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gaggogotgoagagogtgoacgo-ggtgttttcggogocogocgtcocoagoggoaccgg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   600 CATCGTGCCCAGCCCCGACTGGTTCGTGGCGTGGACAGCCTGGACCTGTGCGACGGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TCCCATCGCCAGGGTGACACTGGTGCGGCTGCGACAGARCCCCAGGGCCTTCATCCCTCC
                                                                                                                                                                                                                                                                                                                             gccttccccaagcagtaccccctgttccgccccctgcccagtggtcttcgctgggg
                                                                                                                                   Length 1009;
                                                                                                                                                          ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              883
                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gccgctggactgcgaggtctccctgtggtcgtcctggggactgtgcggag
                                                                                                                                    DB 10;
                                                                                                                                                          10;
                                                                                                                                 77.9%; Score 861.2; DB 10 98.2%; Pred. No. 2.7e-143; ive 5; Mismatches 10;
                                                                                                                                              al Similarity 98.2
874; Conservative
                                                                                      ø
                                                                                                                                   Query Match
                                                                                                                                               Best Local
                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   . 840
                                                                                   BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                           241
                                                                                                                                                                                                                                                                                                                                                                                                 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      780
                                                                                                                                                                                                                                                                             121
                                                                                                                                                                                                                                                                                                                            181
                                                                                                                                                                                                                                                                                                                                                  300
                                                                                                                                                                                                                                                                                                                                                                                                                                                420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 650
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             840
                                                                                                ORIGIN
                                                                                                                                                                                                                               ζ,
                                                                                                                                                                                                                                                    gg
                                                                                                                                                                                                                                                                                                    ρp
                                                                                                                                                                                                                                                                                                                                                  qq
                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             QC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             pp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          qe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5
                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                            Óγ
                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                          Ωý
                                                                                                                                                                                                                                                                                                                                                                                                qq
                                                                                                                                                                                                                                                                                                                                                                                                                        Óγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       óλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ōλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     qG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
```

셤

```
source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM
                  360
                                                                                                                                  487
                                                                                                                                                                                                                                                                                              607
                                                                                                                                                                                                                                                                                                                                                                          299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 984
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 846
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               897
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE
JOURNAL
                                                         427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VERSION · KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AL551786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SOURCE
                                                                                                                                                                                                                                                       QQ
                                                                                                                                                                                                                                                                                                                                 qq
                                                                                                                                                                                                                                                                                                                                                                                                          qc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             q
                                                         ØΥ
                                                                                                                                  9
                                                                                                                                                                         QQ
                                                                                                                                                                                                                    ŏ
                                                                                                                                                                                                                                                                                              δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                     òγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /organism="Homo sapiens"
/db_xref="taxon:9606"
/db_xref="csbnf64yc22"
/clone_lib="frI_NFL06_PL2"
/tissue_type="placenta"
/tissue_type="placenta"
/note="vector: pcWvSpORT 6; Site_l: NotI; lst strand cDNA was primed with a NotI-oligo(dT) primer. Five prime end enriched, double-stranded cDNA was digested with Not I and cloned into the Not I and Eco RN sites of the pcMvSpORT 6 vector. Library was normalized. Library was constructed by Life Technologies. Contact: Feng Liang Life Technologies.

a division of Invitrogen 9800 Medical Center Drive Rockville, Maryland 20850, USA Fax : (1) 301 610 8371
Email: fliang@lifetech.com URL : http://fullength.invitrogen.com" 3 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5;
                                                                                                                                                                                                                                   Homo sapiens
Bukaryotas; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 904)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ctcctcctggccactctcggcgccgccggccagcctcttggggggagagtccatctgttcc 126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 catagetecgaetacageatgtggaggaagaaceagtaegteagtaaegggetgegegae 306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       241 CATAGCTCCGACTACAGCATGTGGAGGAAGAACCAGTACGTCAGTAACGGGCTGCGCGAC 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                tttgcggagcgcggcgaggcctggggcgctgatgaaggagatcgagggcggcggggggaggcg 366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITCCGGA-SCCGCCGAGGCCTGGGCCCTGATGAAGGAGATCGAGGCGGCGGGGGAGGCC 359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ctgqagagcgtgcacgcggtgttttcggcgcccgccgtccccagcggcaccgggcagacg 426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  7 tectgecgggtgatggaaaaccecageeeggeegeegeeetgggeaaggeeettgeget 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 TCCTGCCGGGTGATGGAAAACCCCAGCCCGGCCGCCCTGGGCAAGGCCCTTGTGCGCT 60
                                                                                                AL551401 904 bp mRNA EST 16-FEB-2001
AL551401 LTI_NFL006_PL2 Homo sapiens cDNA clone CSODI064YC22
                                                                                                                                                                                                                                                                                                                                                                                          Genoscope - Centre National de Sequencage
BP 191 91006 EVRY cedex - France
Emall: segref@genoscope.cns.fr, Web : www.genoscope.cns.fr.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cccaagcagtaccccctgttccgccccctgcccagtggtcttcgctgctgggggccgcg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 904;
960 GCCGCTGGACTGCGAAGTCTCCCTGTGGTCGTCCTGGGGGACTGTGCGGRG 1009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ;
9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pred. No. 4.8e-139;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    75.8%; Score 837.2;
98.5%; Pred. No. 4.8e
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Location/Qualifiers
                                                                                                                                                                           ALS51401.1 GI:12889312
                                                                                                                                       prime, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                            Contact: Genoscope
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches 894; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                     AL551401
                                                                                                                                                                                                                      human.
                                                                                                                                                                                                EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            source
                                                                                                LOCUS
                                                                                                                                                                                                                                       ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BASE COUNT
                                                                                                                                                                                                                                                                                            REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                   TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              307
                                                                                                                                                         ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   247
                                                                           AL551401
                                                                                                                                                                                                KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURES
                                                                                                                                                                               VERSION
                                                                                                                                                                                                                                                                                                                                                                          COMMENT
```

g õ g

ò

Op

ò

a ŏ

ò

```
/tissue_type="placenta" // tissue_type="placenta" // tissue_type="placenta" // tote="Vector: pCMYSPORT 6; Site_1: NotI; 1st strand cDNA was primed with a NotI-oligo(dT) primer. Five prime end enriched, double-stranded cDNA was digested with Not I and enriched, double-stranded cDNA was digested with Not I and coloned into the Not I and Eco RV sites of the pCMVSPORT 6 vector. Library was normalized clubrary was constructed by Life Technologies. Contact : Feng Liang Life Technologies,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. I (bases I to 979)
Li,W.B., Gruber,C., Jessee,J. and Polayes,D.
Full.length cDNA libraries and normalization
Unpublished (2001)
486
                                                                                                                             420 TCGGCGGA-CTGGAGGTGCAGCGCAGGCACTCGCTGGTTTGTGGGTGCGCATCGTG 478
                                                                                                                                                                                                                                                                                                           tteteeteeeceaaettegeeaceateeegeaggaeacggtgaeegagataaegteetee 666
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                agteetgeecageagggaeaatgagattgtagaeagegeeteagtteeagaaaegeeget 845
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          cccagccccgactggttcgtgggcgtggacagcctggacctgtgcgacggggaccgttgg 546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              598 TICTCCTCCCCCAACTTCGCCACCATCCCGCAGAACACGGTGACCGAGATAACGTCCTCC 657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   totoccagoccaccoggoccaactocttctactaccogoggotgaaggocctgcctcccate 726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ggactgcgaggtctccctgtggtcgtcctggggactgtgcggaggccactgtgggaggct 905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AL551786 979 bp mRNA EST 16-FEB-2001
AL551786 LTI_NFL006_PL2 Homo sapiens CDNA clone CSODIO61YD20 prime, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Genoscope - Centre National de Sequencage
BP 191 91006 EVRY cedex - France
Email: segref@genoscope.cns.fr, Web : www.genoscope.cns.fr.
                                                                                                                                                                                                                             tcggcggagctggaggtgcagcgcaggcactcgctggtctcgtttgtggtgcgcatcgtg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      - Centre National de Sequencage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /clone_lib="LTI_NFL006_PL2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="CSODI061YD20"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AL551786.1 GI:12890071
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Contact: Genoscope
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .979
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       906 cgggacca 913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CGGGACAA 904
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           human.
```

```
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ΛÔ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  qc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ^{\circ}
                 q:l
                                                ŏ
                                                                             q
                                                                                                                                                        10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               837 recrededemorterecedadecaacrecrescadecressaccaadagecaesceresera 896
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               930 cgtccgggtccagcccgccaacaacgggagcccctgccccgagctcgaagaagaggctga 989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ctactacccgcggctgaaggccctgcctcccatcgccagggtgacactggtgcggctgcg 752
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         753 acagagccccagggccttcatccctcccgccccagtcctgcccagcagggacaatgagat 812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         871 tectggggaetgtgeggaggeeactg-tgggaggetegggaecaagageaggaetegeta 929
a division of Invitrogen 9800 Medical Center Drive Rockville, Maryland 20850, USA Fax: (1) 301 610 8371 Email: fliangelifetech.com URL: strict:/fulllength.invitrogen.com 334 c 307 g 156 t 16 others
                                                                                                                                                                                                                                                                                                               gegecegeegteeccageggeacegggeaggteggeggagetggaggtgeagegeagg 453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               360 GCGCCCGCCCTCCCCAGCGGCACCGGCAGACGTCGGCGGA-STGGAGGTGCAGCGCAGG 418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cactegetggtetegtttgtg-gtgegeategtgeecageecegaetggttegtgggegt 512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               513 ggacagcctggacctgtgcgacggggaccgttggcgggaacaggcggcgctggacctgta 572
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      479 GGACAGCCTGGACCTGTGCGACGGGACCGGTGGCGGGAACAGGCGGCGCTGGACTGTA 538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     573 cccctacgacgccgggacggcacagcgtcacctctcctcccccaacttcgccaccat 632
                                                                                                                                                                                                                                                                 aagaaccagtacgtcagtaacgggctgcggactttgcggagcgcggcgaggcctgggcg 333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ctgatgaaggagatcgaggcggcgggggggggcgctgcagagcgtgcacgcggtgttttcg 393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  539 CCCCTACGAAGCCGGGANGGACAGCGGCTTCAACTTCTCCT-CCCCAANTTTGNCANCAT 597
                                                                                                                                                                                                                                                   94 ggccagcctcttggggggagagtccatctgttccgccagagccctggccaaatacagcatc 153
                                                                                                                                                                                       coggcogcocctggggcaaggcoctctgcgctctcctcctggccactctcggcgccgcc 93
                                                                                                                                                                                                                    1 CCGGCCGCCGCCCTGGGCCCTCTGCGCTCTCCTGGCCACTCTCGGCGCGCCGCC 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        813 tg-tagacagegeetcagttecagaaaegeegetggaetgegaggteteeetgtgg-teg
                                                                                                                                                                                                                                                                                                                                                                                                                                                    657 CTACTACCCGCGCGCTGAAGGCCCTGCCTCCCATCGCCAGGGTGACACTGCTGCGGCTGCG
                                                                                                                                                          10;
                                                                                                                           DB 10; Length 979;
                                                                                                                                                          23; Indels
                                                                                                                         74.8%; Score 826.8; DB 10 95.5%; Pred. No. 3.4e-137;
                                                                                                                                                        11; Mismatches
                                                                                                                                                           Matches 941; Conservative
                                                                                                                                             Best Local Similarity
                                                                    ø
                                                                                                                              Query Match
                                                                BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                693
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                454
                                                                                                                                                                                          34
                                                                                                                                                                                                                                                                                     61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                             òγ
                                                                                                                                                                                                                                                                                                                                                                                                          a
                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 οχ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ŏ
                                                                                                                                                                                          ŏ
                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                      õ
```

```
/clone="csolo86501"
/clone="csolo86501"
/clone="lb="LTI_INFL006_PL2"
/tissue_type="placenta"
/tissue_type="placenta"
/rissue_type="placenta"
/note="vector: pcwspor 6; Site_1: NotI; lst strand cDNA
/note="vector: pcwspor 6; Site_1: NotI; lst strand cDNA
was primed with a NotI-oligo(dT) primer. Five prime end
enriched, double-stranded cDNA was digested with Not I and
cloned into the Not I and Eco RV sites of the pcWNSpORT 6
vector. Library was normalized. Library was constructed by
Life Technologies. Contact: Feng Liang Life Technologies,
a division of Invitrogen 8000 Medical Center Drive
Rockville, Maryland 20850, USA Fax : (1) 301 610 8371
Email: filangth.invitrogen.com URL:
http://fullength.invitrogen.com"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61 tgcgctctcctcctggccactctcggcgccgccggccagcctttgggggagagtccatc 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   tgttccgccayagccctggccaaatacagcatcaccttcacgggcaagtggagccagacg 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 71 Tececitricical activities and a second and a second and a second and a second a s
Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 cgctgcctgccgggtgatggatggaaaacccagcccggccgccctgggcaaggcctc 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               11 cerecrecrecesestanganaacceaseceseceseceresecanded 70
                                                                                                                                                                                                                                                                                                                                                                                                                                            16-FEB-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AL554806 LTI_NFL006_PL2 Homo sapiens cDNA clone CS0DI086YG11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 131 TGTTCCGCCAGAGCCCCGGCCAAATACAGCATCACCTTCACGGCAAGTGGAGCCAGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          geetteeceaageagtaececetgtteegeecectgeceagtggtettegetgetgggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Genoscope - Centre National de Sequencage
BP 191 91006 EVRY cedex - France
Email: seqref@genoscope.cns.fr, Web : www.genoscope.cns.fr.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .;
;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 10; Length 801;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mammalia; Butheria; Primates; Catarrhini; Hon 1 (bases 1 to 801)
Li,W.B., Gruber,C., Jessee,J. and Polayes,D. Full-length CDNA libraries and normalization Unpublished (2001)
Contact: Genoscope
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .8e-126;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     69.0%; Score 762.6;
99.2%; Pred. No. 7.8e
tive 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                mRNA
                                                                                                                                                                                                                          956 GTGCGT-CCTKATAAATGCGTCTAA 979
                                                                                                                                             990 gtgcgtccctgataactgcgtctaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AL554806.1 GI:12895943
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         prime, mRNA sequence. AL554806
                                                                                                                                                                                                                                                                                                                                                                                                                                                801 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1. .801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           al Similarity
787; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                     AL554806
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best Local
Matches 78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                   AL554806
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOURCE
```

'n

ò qq ò g ò g ò 엄 õ q

```
/clone_lib="LTI_RELO06_PL2"
/tissue_type="placenta"
/t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 825)
                                                                                                                                                                                                                                                                                                                                                                                                                                                  540
   cgcgactttgcggagcgcggcgaggcctgggcgctgatgaaggagatcgaggcggcggggg 360
                                                                                                                                                       420
                                                                                                                                                                             009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AL543187 825 bp mRNA EST 16-FEB-2001
AL543187 LTI_NFL006_PL2 Homo sapiens CDNA clone CSODI002YM16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Genoscope - Centre National de Sequencage
BP 191 91006 EVRY cedex - France
Email: segref@genoscope.cns.fr, Web : www.genoscope.cns.fr.
                                                                                                                                                                                                                                                                                                                                                                                                                               481 atcgtgcccagccccgactggttcgtgggcgtggacagcctggacctgtgcgacggggac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         311 CGCGACTTTGCGGA-CGCGCGGGCCTGGCCTGATGAAGGAGATCGAGGCGGGGG
                                                                                                                                                   gaggegetgeagagegtgeacgeggtgtttteggegeecgeegteeceageggeacegg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ttcaccttctcctccccaacttcgccaccatcccgcaggacacggtgaccgagataacg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Li,W.B., Gruber,C., Jessee,J. and Polayes,D. Full-length cDNA libraries and normalization Unpublished (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Email : fliangelifetech.com URL :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /clone="CS0DI002YM16"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AL543187.1 GI:12875665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            prime, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Contact: Genoscope
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gccccagtcctgc 793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            789 GCCCAGTCCTGC 801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM
                                                                                                                                           361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FRENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT
AL543187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SOURCE
```

g

ò

q

g à

õ

```
ï
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi, Mammalia; Eutheria, Primates, Catarrhini, Hominidae, Homo. 1 (basea 1 to 971)
Li,W.B., Gruber,C., Jessee,J. and Polayes,D.
Full-length cDNA libraries and normalization
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        990 gigogiccotgataacigogictaagaccagagccccgcagcagcccctggggccccccggag 1049
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         569
                                                                                                                                                                                                                                                                                                             749
                                                                                                                                                                                                                                                                                                                                                                          359
                                                                                                                                                                                                                                                                                                                                                                                                  808
                                                                                                                                                                                                                                                                                                                                                                                                                          419
                                                                                                                                                                                                                                                                                                                                                                                                                                                869
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       479
                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       540 CGTCCGGGTCCAGCCCGCCAACAACGGAGCHCCTGCCCCGAGCTCGAAGAAGAGGCTGA 599
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AL550317 971 bp mRNA EST 16-FEB-2001
AL550317 LTI_NFL006_PL2 Homo sapiens CDNA clone CS0DI039YK16
Prime, mRNA sequence.
                                                                                                                                                                                                     1050 ccatgggggtgtcgggggctcctgtgcaggctcatgctgcaggcggccgagggcaca 1105
                                                                                                                                                                                                                                                                                                                                                               1 TTCGGCGCCCGCCGTCCCCAGCGGCACCAGCGTCGGCGGA-CTGGAGGTGCAGCG
                                                                                                                                                                                                                                                                                                                                                                                               750 gcgacagagccccagggccttcatcctcccgccccagtcctgcccagcaggacaatga
                                                                                                                                                                                                                                                                                                                                                                                                           810 gattgtagacagcgcctcagttccagaaacgccgctggactgcgaggtctccctgtggtc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         930 egtccgggtccagcccgccaacaacgggagcccctgccccgagctcgaagaagaggctga
                                                                                                                                                                                                                                                   570 gtacccctacgacgccgggacggacagcggcttcaccttctcctcccccaacttcgccac
                                                                                                                                                                                                                                                                                                  630 catocogcaggacacggtgaccgagataacgtcctcctcccagccaccoggccaactc
                                                                                                                                                                                                                                                                                                                                                 cttctactacccgcggctgaaggccctgcctcccatcgccagggtgacactggtgcggct
                                                                                                                                                                                                                                                                                                                                                                                                                                                         1;
                                                             DB 10; Length 825;
             others
                                                                                   Indels
             a
http://fulllength.invitrogen.com"
                                                          Score 701.6; DB 10;
Pred. No. 5.1e-115;
1; Mismatches 1;
            135
           265 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AL550317.1 GI:12887174
                                                          63.5%;
99.6%;
             ပ
                                                          Query Match 63.59
Best Local Similarity 99.69
Matches 713; Conservative
            292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EST
            BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LOCUS
                                                                                                                                                                                                                                                                                                                                                 069
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 æ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM
                                                                                                                                                        450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AL550317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VERSION
                      ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOURCE
                                                                                                         δλ
                                                                                                                              Dp
                                                                                                                                                                            g
                                                                                                                                                                                                     δy
                                                                                                                                                                                                                            q
                                                                                                                                                                                                                                                   ζý
                                                                                                                                                                                                                                                                         Op
                                                                                                                                                                                                                                                                                                  οy
                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                      q
                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                  Ob
                                                                                                                                                                                                                                                                                                                                                                                                                                            οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 pp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       òγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              qq
```

```
gctcogactacagcatgtggaggaagaacc-agtacgtcagtaacgggctgcgcgacttt 309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /db_xref="taxon:9606"
/clone="CS0DI033YF20"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Location/Qualiflers
                                                                                                                                                                                                                                                     AL547912.1 GI:12882420
                                                                                                                                                                                                                prime, mRNA sequence. AL547912
                                                                       719 ctcccatcgccagggtgac 737
                                                                                                        953 CTCCCATCGCCAGGGTGAC 971
                                                                                                                                                                                                                                                                                                                                                                                                                    Contact: Genoscope
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches 711; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Local Similarity
                                                                                                                                                                                                                                                                                                        Homo sapiens
                                                                                                                                                                                                                                                                                         . nemiii
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BASE COUNT
                                                                                                                                                                                                     DEFINITION
                                                                                                                                                                                                                                                                                                        ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             251
                                                                                                                                                                                                                                        ACCESSION
                                                                                                                                                                                                                                                                                                                                                       REFERENCE
                                                                                                                                                                                                                                                                                                                                                                      AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                     JOURNAL
                                                                                                                                                                     AL547912
                                                                                                                                                                                                                                                                      KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                          VERSION
                                                                                                                                                                                                                                                                                                                                                                                       TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORIGIN
                                                                                                                                                                                                                                                                                    SOURCE
                                                                                                                                                                                        LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Op
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Óλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             òγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ó
                                        Dp
                                                                           ò
                                                                                                         a
                                                                                                                                                                                                       was primed with a NotI-oligo(dT) primer. Five prime end enriched, double-stranded cDNA was disested with Not I and cloned into the Not I and Eco RV sites of the pCMVSPORT 6 vector. Library was normalized. Library was constructed by Life Technologies. Contact: Feng Liang Life Technologies, a division of Invitrogen 9800 Medical Center Drive Rockville, Maryland 20850, USA Fax: (1) 301 610 8371
                                                                                                                                                         /clone_lib="LTI_NFL006_PL2"
/tissue_type="placenta"
/note="Vector: pCMVSPORT 6; Site_1: NotI; lst strand cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 301 cgcgactttgccggagccgcggcgagcctgggcgctgatgaaggagatcgaggcggggg 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                cagacgtcggcggagctggaggtgcagcgcaggcactcgctggtctcgtttgtggtgcgc 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               655 CAGACGICGGCGGA-CIGGAGGIGCAGCGCAGGCACICGCIGGICICGTITGIGGGGCGC 713
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              atogtgoccagcccgactggttcgtgggogtggacagcctggacctgtgcgacggggac 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             714 ATCGTGCCCAGCCCCGACTGGTTCGTGGGCGTGGACGTGGACCTGTGCGACGTGGGGGA- 772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               tteacettetectececeaaettegecaceatecegeaggae-aeggtgaeegagataae 659
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61 tgcgctctcctcctggccactctcggcgccggccggccagcctcttgggggagagtccatc 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  geetteeceaageagtaceeetgtteegeeeeetgeeeagtggtettegetggggg 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   241 geogogicatagetecgaetacageatgiggaggaagaaccagtaegteagtaaegggetg 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     235 CGCTGCTCCTGCCGGGTGATGGAAAACCCCAGCCCGGCCGCCCTGGGCAAGGCCCTC 294
                                                                                                                                                                                                                                                                                                                                                                                                                                                        4; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 cgctgctcctgccgggtgatggaaaaccccagcccggccgccgcctgggcaaggccctc 60
               Contact: Genoscope
Genoscope - Centre National de Sequencage
BP 191 91006 FWRY cedex - France
Email: seqref@genoscope.cns.fr, Web : www.genoscope.cns.fr.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  62.0%; Score 685.2; DB 10; Length 971; 98.9%; Pred. No. 4.2e-112;
                                                                                                                                                                                                                                                                                                                                                        3 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                        Email: fliang@lifetech.com URL:
http://fulllength.invitrogen.com"
354 c 315 g 152 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                        0; Mismatches
                                                                                                             /organism="Homo sapiens"
                                                                                                                          /db_xref="taxon:9606"
/clone="cs0D1039YK16"
                                                                                Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches 731; Conservative
Unpublished (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                                                                                                                          147
                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local
                                                                                                 source
                                                                                                                                                                                                                                                                                                                                                          BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       181
JOURNAL
                                                                                FEATURES
                 COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Op
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Оp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
```

```
/clone_lib="LTT_NFL006_PL2"
/tissue_type="Placenta"
/t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 931)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gagccctggccaaatacagcatcaccttcacgggcaagtggagccagacggccttccca 190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       71 toctggccactctcggcgccggccagcctcttgggggagagtccatctgttccgcca 130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           314 GAGCCCCGGCCAAATACAGCATCACCTTCACGGGCAAGTGGAGCCAGACGGCCTTCCCCA 373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    660 gtectecteceagecacceggecaact-cettetactaccegeggetgaaggeeetge 718
                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      12 cogggtgatgaaaacccca-gcccggccgccgtcgggcaaggcctttgcgctctcc 70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AL547912 931 bp mRNA EST 16-FEB-2001
AL547912 LTI_NFL006_PL2 Homo sapiens cDNA clone CSODI033KF20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Email: segref@genoscope.cns.fr, Web : www.genoscope.cns.fr.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       59.1%; Score 653.6; DB 10; Length 931; 97.4%; Pred. No. 1.6e-106; tive 5; Mismatches 9; Indels 5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Li,W.B., Gruber,C., Jessee,J. and Polayes,D. Full-length cDNA libraries and normalization Unpublished (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Genoscope - Centre National de Sequencage
BP 191 91006 EVRY cedex - France
```

5;

合 à g ò g ô a à QQ

429

609

g

g ö

ò

3;

```
human.
                                                                                                      Matches 652;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EST
                                                                       Query Match
Best Local
        BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 11
AL564981/C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DEFINITION
                                                                                                                                                                                                 61
                                                                                                                                                                                                                                321
                                                                                                                                                                                                                                                              121
                                                                                                                                                                                                                                                                                                                             181
                                                                                                                                                                                                                                                                                                                                                                                            241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LOCUS
                                                                                                                                                                  q
                                                                                                                                                                                                                             qq
                                                                                                                                                                                                                                                                                          q
                                                                                                                                  ŏ
                                                                                                                                                                                                 ŏ
                                                                                                                                                                                                                                                            ο̈́γ
                                                                                                                                                                                                                                                                                                                     .5
                                                                                                                                                                                                                                                                                                                                                       q
                                                                                                                                                                                                                                                                                                                                                                                          ô
                                                                                                                                                                                                                                                                                                                                                                                                                      qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Op
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      \dot{\Omega}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /tissue_type="Adult brain"
//ince="Vector: pCMYSPORT 6: Site_1: NotI; 1st strand cDNA
was primed with a NotI-oligo(dT) primer. Five prime end
enriched, double-stranded cDNA was digested with Not I and
cloned into the Not I and Eco RV sites of the pCMVSPORT 6
vector. Library was constructed by Life Technologies.
Contact: Feng Liang Life Technologies, a division of
Invitrogen 9800 Medical Center Drive Rockville, Maryland
fliang@lifetech.com URL:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 935)
Li, W.B., Gruber, C., Jessee, J. and Polayes, D.
Full-length cDNA libraries and normalization
Unpublished (2001)
434 GCTCCGACTACAGCATGTGGAGGAAGCAAGTACGTCAGTAACGGGGCTGCGCGACTTT 493
                                                                                                   428
                                                                                                                                613
                                                                                                                                                                488
                                                                                                                                                                                              673
                                                                                                                                                                                                                             548
                                                                                                                                                                                                                                                    674 CAGCCCCGACTGGTTCGTGGGCGTGGACAGCCTGGACCTGTGCGACGGGACCGTTGGCG 733
                                                                                                                                                                                                                                                                                     ctctccccaacttcgccaccatcccgcaggacacggtgaccgagataacgtctcctc 668
                                                                                                                                                                                                                                                                                                                                                                     13-FEB-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AL532820 935 bp mRNA EST 13-FEB-2001
AL532820 LTI_FL015_Brn1 Homo sapiens cDNA clone CS0DN002YN20
                               gcagagcgtgcacgcggtgttttcggcgcccgccgtccccagcggcaccgggcagacgtc
                                                                                                              ggcggagctggaggtgcagcgcaggcactcgctggtccgtttgtggtgcgcatcgtgcc
                                                                                                                                                                           489 cagccccgactggttcgtggggcgtggacagcctggacctgtgcgacggggaccgttggcg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Genoscope - Centre National de Sequencage
BP 191 91006 EVRY cedex - France
Email: seqref@genoscope.cns.fr, Web : www.genoscope.cns.fr.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 http://fulllength.invitrogen.com
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /clone="CSODNOO2YN20"
/clone_lib="LTI_FL015_Brn1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AL532820.1 GI:12796313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    prime, mRNA sequence. AL532820
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /sex="male"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Contact: Genoscope
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             729 cagggtgaca 738
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         912 MAGGGTGAAA 921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        . uman
```

RESULT 10 AL532820 LOCUS DEFINITION

ORGANISM

TLE REFERENCE

URNAL

COMMENT

FEATURES

ACCESSION

KEYWORDS

SOURCE

VERSION

```
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 989) Li, W.B., Gruber, C., Jessee, J. and Polayes, D. Full.length cDNA libraries and normalization Unpublished (2001)
                                                                                                                                                                                                                                                                                                                               180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        tgcgctctcctcctggccactctcggccgccggccagcctcttgggggagagtccatc 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              recerrerecrescentrerescences as a reconstruction of the reconstruc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             799 CGTTGGCGGGAACAGGCGGGGGCCTGGACCTGTMCCCCTMCGMCGCCGGGACGGMCASCGGC 858
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AL564981 BB9 bp mRNA EST 16-FEB-2001 AL564981 LTI_FL015_Brn1 Homo sapiens cDNA clone CSODN002rN20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      tgttccgccagagccctggccaaatacagcatcaccttcacgggcaagtggagccagacg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gccttccccaagcagtaccccctgttccgccccctgcccagtggtcttcgctggggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               geegegeatageteegactacageatgtggaggaagaaccagtacgtcagtaacgggetg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          361 gaggcgctgcagagcgtgcacgcggtgttttcggcgccgccgtccccagcggcaccgg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          481 atcgtycccayccccgactygttcgtgggcgtggacaycctggacctgtgcgacggggac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       421 cagacgtcggcggagctggaggtgcagccaggcactcgctggtctcgttgtggtgcgc
                                                                                                                                                                                                                                                         3;
                                                                                                                                                                      935;
                                                                                                                                                                      DB 10; Length
                                                                                                                                                                                                                                                    Indels
        12
                                                                                                                                                         56.2%; Score 621.4; DB 10 97.2%; Pred. No. 8.4e-101; live 10; Mismatches 6;
        145
        6
312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AL564981.1 GI:12915901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       prime, mRNA sequence.
    Ö
                                                                                                                                                                                                                                                    Conservative
    328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      918 recreated 928
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       661 tectectete 671
                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo sapiens
    a
138
```

σ

```
AL551123.1 GI:12888764
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            54.48;
                                                                                 prime, mRNA sequence.
                                                838 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                296 c
                                                                                                                                                                                                                                                                      Contact: Genoscope
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches 614; Conservative
                                                                                                                                                                                                                                                                                                                                              .838
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity
                                                                                                                                                             Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ๙
                                                     AL551123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 122
                                                                                                                                                human.
                                                                                                                                                                                                                                                                                                                                                   source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   361
                         17
                                                                  DEFINITION
                                                                                                                                                             ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             181
                                                                                                                                                                                                                                      TITLE
JOURNAL
                                                                                                  ACCESSION
                                                                                                                                                                                                          REFERENCE
                                                                                                                                                                                                                           AUTHORS
                                      AL551123
                                                                                                                                 KEYWORDS
                                                                                                                                                                                                                                                                                                                                    FEATURES
                                                                                                                 VERSION
                                                                                                                                                                                                                                                                      COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORIGIN
                         RESULT
                                                                                                                                              SOURCE
                                                       LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                           /tissue_rype="Adult brain"
/tissue_rype="Adult brain"
/note="Vector: pcMvSpORT 6; Site_1: NotI: lst strand cDNA
was primed with a NotI-oligo(dT) primer. Five prime end
enriched, double-stranded cDNA was digested with Not I and
cloned into the Not I and Eco RV sites of the pcMvSpORT 6
vector. Library was constructed by Life Technologies.
Contact : Feng Liang Life Technologies, a division of
Invitrogen 9800 Medical Center Drive Rockville, Maryland
20850, USA Fax : (1) 301 610 8371 Email :
fliangdilfetech.com URL :
http:/folllength.invitrogen.com"
http:/folllength.invitrogen.com"

96 a 278 c 338 g 154 t 23 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gictaagaccagagccccgcagccctggggccccccggagccatggggtgtcggggggct 1068
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                accgagataacgtoctoctoctocoagocoaccoggocoactcottotactaccogcggotg 708
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gttccagaaacgccgctggactgcgaggtctccctgtggtcgtcctgggggactgtgcgga 888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      446 GTCTAAGACCAGAGCCCCGCAGCCCCTGGGGCCCCCCGGAGCCATGGGGTGTCGGGGGT 387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          769 ttcatccctcccgccccagtcctgcccagcagggacaatgagattgtagacagcgcctca 828
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          530 gcgacggggaccgttggcgggaacaggcggcgctggacctgtacccctacgacgccggga 589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 866 CGRACAGCGGCTTCACCTTCTCCTCCCCCAACTTCGCCACCATCCCGCAGGACACGGTG 807
                                                                                                                                                                                                                                                                                                                                                                                                                               1; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       590 oggacagoggettcacetteteet-ceeccaaettegecaecatecegeaggacaeggtg
           Genoscope - Centre National de Sequencage
BP 191 91006 EVRY cedex - France
Email: segref@genoscope.cns.fr, Web : www.genoscope.cns.fr.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              806 ACCGAGATAACGTCCTCTCTCCCAGCCACCCGGCCAACTCCTTCTACWACCCGCGGCTG
                                                                                                                                                                                                                                                                                                                                                                                              S5.5%; Score 613.8; DB 10; Length 989; Similarity 98.3%; Pred. No. 1.9e-99; 26; Conservative 4; Mismatches 6; Indels 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1069 cctgtgcaggctcatgctgcaggcggccgagggcaca 1105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        386 CCTGTGCAGGCTCATGCTGCAGGCGCCGAGGGCACA 350
                                                                                                               /clone="CSON002YN20"
/clone_lib="LTI_FL015_Brn1"
/sex="male"
                                                                                      /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                        Location/Qualifiers
Contact: Genoscope
                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches 626; Conservative
                                                                         . 989
                                                                                                                                                                                                                                                                                                                                       196
                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                    Best Local
                                                                            source
                                                                                                                                                                                                                                                                                                                                      BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        829
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     649
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          926
                                                            FEATURES
 COMMENT
                                                                                                                                                                                                                                                                                                                                                      ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δλ
```

```
/clone_lbb="LTI_NFL006_PL2"
/tissue_type="placenta"
/t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            cloned into the Not I and Eco RV sites of the pCMVSPORT 6 vector. Library was normalized. Library was constructed by Life Technologies. Contact: Feng Liang Life Technologies. Contact: Feng Liang Life Technologies, a division of Invitrogen 8000 Medical Center Drive Rockville, Maryland 20850, USA Fax: (1) 301 610 8371 Email: Fliangellifetech.com URL: http://fulllength.invitrogen.com"
                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 838)

Li, W.B., Gruber, C., Jessee, J. and Polayes, D.
Full-length cDNA libraries and normalization

Unpublished (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   301 cgcgactttgcggagcgcgaggcctgggcgctgatgaaggagatcgaggcggcgggg 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                216 cecrecrecrecesegrargeaaaaccccascccsecccccccresscaageccrc 275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   61 tgcgctctcctcctggccactctcggcgccggccggccagcctcttgggggagggccatc 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       456 GCCGCGCATAGCTCCGACTACAGCATGTGGAGGAAGAACCAGTACGTCAGTAACGGGCTG 515
                                                   AL551123 LTI_NFL006_PL2 Homo sapiens cDNA clone CS0DI066YN19 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 cgctgctcctgccgggtgatggaaaaccccagcccggccgccgtcctgggcaaggccctc 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       {\tt Email: seqref@genoscope.cns.fr, Web : www.genoscope.cns.fr.}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gccttccccaagcagtaccccctgttccgccccctgcccagtggtcttcgctgctgggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           396 GCCTTCCCCAAGCAGTACCCCCTGTTCCGCCCCCTGCGCAGTGGTCTTCGCTGCTGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 600.6; DB 10; Length 838;
Pred. No. 4e-97;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       7; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Genoscope - Centre National de Sequencage
BP 191 91006 EVRY cedex - France
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                134 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /clone="CS0DI066YN19"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    281 g
mRNA
```

;

```
/tissue_type="fortiocarcinoma"
/lab_host="DH10B (phage-resistant)"
/lab_host="DH10B (phage-resistant)"
/lab_host="Organ: placenta; Vector: pOTB7; Site_1: XhoI;
Site_2: EcoRI, CDNA made by oliqo-dT primting.
Directionally cloned into EcoRI/XhoI sites using the
following 5' adaptor: GGCACGAG(G). Size=selected >500bp
for average insert size 1:8kb. Library constructed >500bp
Ling Hong in the laboratory of Gerald M. Rubin (University of California, Berkeley) using ZAP-cDNA synthesis kit
of California, Backeley) using ZAP-cDNA synthesis kit
statagene) and Superscript II RT (Life Technologies)."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens
Eukaryota, Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mamaalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 682)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BE407510 682 bp mRNA EST 21-JUL-2000 601300346F1 NIH_MGC_21 Homo sapiens cDNA clone IMAGE:3630467 5'
                                                                                                                                                                                           900
575 GAGGCGCTGCAGAGCGTGCACGCGNTGTTTTCGGCGCCGCCGTCCCCAGCGGCACCGGG 634
                                                                                  694
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
Unpublished (1999)
                                                                                                               atcgtgccagccccgactggttcgtggggcgtggacagcctggacctgtgcgacggggac
                                          cagacgtcggcggagctggaggtgcagcgcaggcactcgctggtctcgtttgtggtgcgc
                                                             695 ATCGTGCCCAGCCCCGACTGGTTCGTGGGCGTGGACGTGGACCTGTGCGACGGGGAC
                                                                                                                                                                                       /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /clone="IMAGE:3630467"
/clone_lib="NIH_MGC_21"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         High quality sequence stop: 648.
Location/Qualifiers
                                                                                                                                                                                                                                                                                    601 ttcaccttctcctccccaacttc 624
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BE407510.1 GI:9343960
                                                                                                                                                                                                                                                                                                                                                                                                                                  mRNA sequence.
BE407510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ø
                                                                                                                                                                                                                                                                                                                                                                                              BE407510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               source
                                                                                                                                                                                                                                                                                                                                                                                                             NOITINI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM
                                                                                                               481
                                                                                                                                                                                       541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
                                                                                                                                                                                                                                                                                                                                                                          07510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMMENT
                                                                                                                                                                                                                                                                                                                                                         RESULT
                                                                       a
                                                                                                                                                g
                                        ð
                                                                                                              ò
                                                                                                                                                                                     õ
                                                                                                                                                                                                                          a
                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                   g
```

```
/clone="CSODIO39VK16"
/clone_lib="LTI_NFL006_PL2"
/tissue_type="placenta"
/note="Vector: pCMVSPORT 6; Site_1: Not1; 1st strand cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (bases I to 1025)

Li, W.B., Gruber, C., Jessee, J. and Polayes, D.

Full-length cDNA libraries and normalization

Unpublished (2001)

Contact: Genoscope
51 tgcgctctcctcctggccactctcggcgccgccggccagcctcttgggggagagtccatc 120
                121 tgttccgccagagccctggccaaatacagcatcaccttcacgggcaagtggagccagacg 180
                                                                       203 GCCTTCCCCAAGCAGTACCCCTGTTCCGCCCCCTGCGCAGTGGTCTTCGCTGCTGGGG 262
                                                                                                                                                                                                                             gccgcgcatagctccgactacagcatgtggaggaagaaccagtacgtcagtaacgggctg 300
                                                                                                                                                                                                                                                                                    540
                                                                                                                                                                                     099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              622 -TTCACTTCTCTCCCCCAA--TTCGCAACACGCGGAGACAGGGGAATAACG 678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AL574221 1025 bp mRNA EST 16-FEB-2001
AL574221 LTI_NFL006_PL2 Homo sapiens cDNA clone CSODI039YK16 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                           621
                                                                                                                goottocccaagcagtacccctgttccgccccctgcccagtggtcttcgctggggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Genoscope - Centre National de Sequencage
BP 191 91006 EVRY cedex - France
Email: seqref@genoscope.cns.fr, Web : www.genoscope.cns.fr.
                                                                                                                                                                                                                                                                                                                                                                                                  481 atcgtgcccagccccgactggttcgtgggcgtggacagcctggacctgtgcgacggggac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         601 ttcaccttctcctcccccaacttcgccaccatcccgcaggacacggtgaccgagataacg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AL574221.1 GI:12934220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   prime, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AL574221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      661 tc 662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                679 TC 680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DEFINITION
                                                                                                              181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AL574221/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORGANISM
                                                                                                                                                                       241
                                                                                                                                                                                                                                                                                                                                                                                                                                                           541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LOCUS
                          g
                                                      δ
                                                                                  qq
                                                                                                              ŏ
                                                                                                                                         g
                                                                                                                                                                                                Db
                                                                                                                                                                       á
                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                        Dp
                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                           ŏ
                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                  δŏ
                                                                                                                                                                                                                                                                                                                                                                                                                            q
                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               QQ
```

4; Gaps

21; Indels

Length 682;

54.3%; Score 600.4; DB 10; 96.2%; Pred. No. 4.2e-97; ive 0; Mismatches 21;

Best Local Similarity 96.2 Matches 637; Conservative

ò

Query Match

```
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 904) Li.W.B., Gruber,C., Jessee,J. and Polayes,D. Full. Hength cDMA libraries and normalization Unpublished (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                      143 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3; Mismatches
                                                                                                                                                                                                                                              /clone_lib="LTI_FL002_PL1"
/lab_host="DH10B"
                                                                                                                                                                                            /organism="Homo sapiens"
                                                                                                                                                                                                            /db_xref="taxon:9606"
/clone="CS0DE012YP18"
                                                                                                                                                             Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                      306 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match 52.4%;
Best Local Similarity 97.1%;
Matches 639; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                      316 c
                                                                                             Contact: Genoscope
                                                                                                                                                                               . 904
                                                                                                                                                                                 source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               479
                                                                                                                                                                                                                                                                                                                                                                                                                                                        BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   539
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    787
                                                           TITLE
JOURNAL
                                            AUTHORS
                         REFERENCE
                                                                                                                                                               FEATURES
                                                                                             COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q
O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
       was primed with a NotI-oligo(dT) primer. Five prime end enriched, double-stranded cDNA was digested with Not I and closed into the Not I and Eco RV sites of the pCMVSPORT 6 vector. Library was normalized. Library was constructed by Life Technologies. Contact. Feng Liang Life Technologies, a division of Invitrogen 9800 Medical Center Drive Rockville, Maryland 20850, USA Fax: (1) 301 610 8371 Email: fliang@lifetech.com URL:

Email: fliang@lifetech.com URL:

a 306 c 176 f 8 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 prime
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      977 aagaagaggetgagtgegteeetgataaetgegtetaagaeceagageeeegeageeetg 1036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCAGGGACAATGAGATTGTAGACAGCGCCTCAGTTCCAGAAACGCCGCTGGACTGCGAGG 666
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 tetecetgtggtegtectggggaetgtgeggaggeeactgtgggaggetegggaeceaga 916
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gcaggactcgctacgtccgggtccagcccgccaacaacgggagccctgccccgagctcg 976
                                                                                                                                                                                                                                                                                                                                                                      eggegetggaectgtaccectacgaegeegggaeggaeageggetteaeetteteetee 616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          acceggecaactecttetactaccegegetgaaggeectgeeteceategecagggtga 736
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AL542564 904 bp mRNA ESI AL542564 LTI_FL002_PLI Homo sapiens cDNA clone CSODE012YP18 5
                                                                                                                                                                                                                                                                                                    497 actggttcgtgggcgtggacagcctggacctgtgcgacggggaccgttggcgggaacagg 556
                                                                                                                                                                                                                                                                                                                                       1024 ACTGGTTCGTGGCGTGGACAGCCTGGACCTGTGCGACGGGGACCGTTGGCGGGAACAGG 965
                                                                                                                                                                                                                                                                   1; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACCGGGCCAACTCCTTCTACTACTACCGGGGTGAAGGCCCTGCCTCCCATCGCCAGGGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gcagggacaatgagattgtagacagcgcctcagttccagaaacgccgctggactgcgagg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ccaacttcgccaccatcccgcaggacacggtgaccgagataacgtcctcctctcccagcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                          605 GCAGGACTCGCTACGTCCGGGTCCAGCCCGCCAACAACGGGAGCCCCTGCCCCGAGCTCG
                                                                                                                                                                                                                               Ouery Match 53.7%; Score 593; DB 10; Length 1025; Best Local Similarity 99.2%; Pred. No. 9.1e-96; Matches 604; Conservative 2; Mismatches 2; Indels 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AL542564.1 GI:12874732
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   , mRNA sequence.
AL542564
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1097 gagggcaca 1105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              425 GAGGGSACA 417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 15
                                                                                                                                                                   BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               737
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     917
                                                                                                                                                                                                                                                                                                                                                                         557
                                                                                                                                                                                                                                                                                                                                                                                                                                          617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 797
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   857
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AL542564
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                        Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                          δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
```

```
CDNA was primed with a NotI-oligo(dT) primer. Five prime con a morificed, double-stranded cDNA was digested with Not I and Eco RV sites of the pCMVSPORT 6 vector. Library was constructed by Life pCMVSPORT 6 vector. Library was constructed by Life Technologies. Contact : Feng Liang Life Technologies, a division of Invitrogen 9800 Medical Center Drive Rockville fliang@lifetech.com URL : (1) 301 610 8371 Email : http://fulllength.invitrogen.com"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61 tgcgctctcctcctggccactctcggcgccgccggccagcctcttgggggagagtccatc 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            299 tgcgcgactttgcggagcgcgggggcctgggcgctgatgaaggagatcgaggcggcgg 358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                727 GCATCGIGCCCAGCCCCGACTGGTTCGTGGGCGTGGACAGCCTGGACCTGTGCGACGGGG 786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 egetgeteetgeegggtgatggaaaaceeeageeeggeegeegteetgggeaaggeete 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             249 CGCTGCTCCTGCCGGGTGATGGAAAACCCCAGCCGGCCGCCGCCCTGGGCAAGGCCCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            121 tgttccgccagagccctggccaatacagcatcaccttcacgggcaagtggagccagacg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gcatogtgcccagccccgactggttcgtgggcgtggacagcctggacctgtgcgacgggg
Genoscope - Centre National de Sequencage
BP 191 91006 EVRY cedex - France
Email: segrefégenoscope.cns.fr, Web : www.genoscope.cns.fr.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           369 TGTTCCGCCAGAGCCCCGGCCAAATACAGCATCACCTTCACGGGCAAGTGGAGCCAGACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      241 geogogoata-geteegaeta-eageatgtggaggaagaaceagtaegteagtaaeggge
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       489 GCCGCGCATATGCTCCGACTATCAGCATGTGGAGGAAGAACCAGTACGTCAGTTACGGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             549 IGCGCGACTITGCGGA-SGCGCGAGGCCTGGGCGCTGATGAAGGAGTCGAGGCGGCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ..
2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 579.2; DB 10; Length 904; Pred. No. 2.5e-93;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         11; Indels
```

oy B

Search completed: December 10, 2001, 19:12:41 Job time: 20116 sec